



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Sorrells *et al.*

Appl. No. 10/086,367

Filed: March 4, 2002

For: **Method And System For
Frequency Up-Conversion**

Confirmation No. 3679

Art Unit: 2682

Examiner: Pan, Yuwen

Atty. Docket: 1744.0020007

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Information Disclosure Statement

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

Listed on accompanying Form PTO-1449 are documents that may be considered material to the examination of this application, in compliance with the duty of disclosure requirements of 37 C.F.R. §§ 1.56, 1.97 and 1.98.

In addition to providing hard copies of the documents as required by applicable rules (see box 7 below), Applicants herewith provide two Compact Discs labeled Disc 1 and Disc 2 having stored thereon searchable electronic copies (in PDF format) of the documents listed on the PTO-1449. More specifically, Disc 1 contains electronic copies of documents AA1-AR1, AA2-AR2, AA3-AR3, AA4-AR4, AA5-AR5, AA6-AR6, AA7-AR7, AA8-AR8, AA9-AR9, AA10-AR10, AA11-AR11, AA12-AR12, AA13-AL13, AN13-AR13, AA14-AI14, AN14-AR14, AA15-AI15, AN15-AR15, AA16-AI16, AN16-AR16, AA17-AI17, AN17-AR17, AA18-AI18, AN18-AR18, AA19-AI19, AN19-AR19, AA20-AI20, AN20-AR20, AA21-AI21, AN21-AR21, AA22-AI22, AN22-AR22, AA23-AI23, AN23-AR23, AA24-AI24, AN24-AR24, AA25-AI25, AN25-AR25, AA26-AI26,

AN26-AR26, AA27-AI27, AN27-AR27, AA28-AI28, AN28-AR28, AA29-AI29, AN29-AR29, AA30-AI30, AN30-AR30, AA31-AI31, AN31-AR31, AA32-AI32, AN32-AR32, AA33-AI33, AN33-AR33, AA34-AI34, AN34-AR34, AA35-AI35, AN35-AR35, AA36-AI36, AN36-AR36, AA37-AI37, AN37-AR37, AA38-AI38, AN38-AR38, AA39-AI39 and AN39-AR39, and Disc 2 contains electronic copies of documents AA40-AI40, AA41-AI41, AA42-AI42, AA43-AI43, AA44-AI44, AA45-AI45, AA46-AI46, AA47-AI47, AA48-AI48, AA49-AI49, AA50-AI50, AA51-AI51, AA52-AI52, AA53-AI53, AA54-AD54, AM10, AJ11-AM11, AJ12-AM12, AJ13-AM13, AJ14-AM14, AJ15-AM15, AJ16-AM16, AJ17-AM17, AJ18-AM18, AJ19-AM19, AJ20-AM20, AJ21-AM21, AJ22-AM22, AJ23, AK23, AP50-AR50, AN51-AR51, AN52-AR52, AN53-AR53, AN54-AR54, AN55-AR55, AN56-AR56, AN57-AR57 and AN58-AR58. Documents AE54-AI54 and AA55-AF55 have not yet been scanned. The file names on the CDs correspond to the identifiers on the PTO-1449. It is noted that the CDs are being provided in addition to hard copies of the documents (as applicable) for the convenience of the Examiner.

Applicants have listed publication dates on the attached PTO-1449 based on information presently available to the undersigned. However, the listed publication dates should not be construed as an admission that the information was actually published on the date indicated.

Applicants reserve the right to establish the patentability of the claimed invention over any of the information provided herewith, and/or to prove that this information may not be prior art, and/or to prove that this information may not be enabling for the teachings purportedly offered.

Applicants provide the following comments regarding the documents:

Documents AD1, AL1, AO1, AC2, AF2, AG2, AI2, AC5, AG5, AB6, AF7, AI7, AB8, AF8, AG9, AK9, AO9, AO11, AA12, AE14, AN14, AB15, AE15, AH15, AO15, AF16, AD18, AG18, AB20, AC20, AQ20, AA22, AH22, AI23, AC24, AF26, AC30, AH31, AC32, AA33, AR33, AH34, AP35 and AO48 were included with Petitions to Make Special pleadings in co-owned related U.S. Patent Nos. 6,061,551, 6,061,555, 6,049,706 and 6,091,940.

Documents AM4, AH6, AL7, AJ9, AM9, AC17, AA20, AG20, AG21, AA24, AD24, AG24, AI31, AA32, AG34, AD36 and AQ37 were cited in searches performed at Applicants' request by the European Patent Office's Searching Authority in the above-referenced co-owned related patents.

Documents AA6, AD6, AO6, AE7, AE8, AA11, AE11, AH11, AI12, AB13, AD13, AH13, AC14, AG14, AE16, AB17, AF19, AD20, AN21, AG23, AH27, AI27, AI28, AH29, AG30, AD37, AR40, AO49 and AQ49 were suggested or identified by potential licensees.

Documents AH5, AH17, AD21, AB34, AE34, AB36, AI36 and AI38 were cited by the Examiner in the above-referenced co-owned related patents.

Documents AR21, AN22-AR22, AN23-23, AN24-AR24, AN25-AR25, AN26-AR26, AN27-AR27, AN28-AR28, AN29-AR29, AN30-AR30, AN31-AR31, AN32-AR32 and AN33-AP33 are press releases issued by assignee ParkerVision, Inc.

Documents AP6-AR6 and AN7-AP7 are copies of Declarations (including Exhibits) made by Messrs. Bultman, Cook, Holtz, Looke, Moses, Parker, and Sorrells, filed in the above-referenced co-owned related patents.

Documents AJ1, AL9, AJ10, AA19, AC25, AB30 and AF32 were cited in search reports in the corresponding foreign applications of the above-referenced co-owned related patents.

Documents AK9, AC17, AD36 and AD40 were cited in a search report in related PCT Appl. No. PCT/US00/21359, filed August 4, 2000, entitled "Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology," directed to related subject matter.

Documents AM10, AJ11, AK11 and AE40 were cited in a communication issued by the International Preliminary Examination Authority in related PCT Appl. No. PCT/US00/01108, filed January 19, 2000, entitled "Frequency Translation and Embodiments Thereof Such as the Family Radio Service," directed to related subject matter.

Documents AI7, AJ9, AK9, AG20, AG21, AB30 and AI43 were cited in a written opinion in related PCT Appl. No. PCT/US00/23923, filed October 18, 1999, entitled "Applications of Frequency Translation," directed to related subject matter.

Documents AA44, AL11, AM11 and AQ50 were cited in a communication issued by the International Searching Authority in related PCT Appl. No. PCT/US00/09911, filed April 14, 2000, entitled "Method And System For Down-converting an Electromagnetic Signal, And Transforms For Same," directed to related subject matter.

Documents AB44 and AC44 were cited by an Examiner in related U.S. Patent Appl. No. 09/293,342, filed April 16, 1999, entitled "Method and System for Down-Converting Electromagnetic Signals Including Resonant Structures for Enhanced Energy Transfer," directed to related subject matter.

Documents AD44-AI44 and AA45-AD45 were cited by an Examiner in related U.S. Patent Appl. No. 09/261,129, filed March 3, 1999, entitled "Applications of Universal Frequency Translation," directed to related subject matter.

Documents AE45, AF45, AJ12 and AK12 were cited in a search report in related PCT Appl. No. PCT/US00/27555, filed October 6, 2000, entitled "DC Offset, Re-radiation, and I/Q Solutions Using Universal Frequency Translation Technology," directed to related subject matter.

Documents AG45, AH45, AL12 and AM12 were cited in a search report in related PCT Appl. No. PCT/US00/34771, filed January 21, 2000, entitled "Phase Comparator Using Undersampling," directed to related subject matter.

Documents AI45, AJ13-AL13 and AB46 were cited in a search report issued in related PCT Appl. No. PCT/US00/27281, filed October 4, 2000, entitled "Frequency Converter and Method," directed to related subject matter.

Document AA46 was cited by an Examiner in related U.S. Patent Appl. No. 09/293,580, filed April 16, 1999, entitled "Method and System for Frequency Up-Conversion with a Variety of Transmitted Configurations," directed to related subject matter.

Document AC46 was cited by an Examiner in related U.S. Patent Appl. No. 09/670,831, filed September 28, 2000, entitled "Universal Frequency Translation, Embodiments Thereof, and a Web Site and Web Pages Directed to Same," directed to related subject matter.

Document AD46 was cited by an Examiner in related U.S. Patent Appl. No. 09/293,095, filed April 16, 1999, entitled "Method and System for Down-Converting an

Electromagnetic Signal Having Optimized Switch Structures," directed to related subject matter.

Documents AD35, AE46-AI46 and AA47 were cited by an Examiner in related U.S. Patent Appl. No. 09/293,342, filed April 16, 1999, entitled "Method and System for Down-Converting Electromagnetic Signals Including Resonant Structures for Enhanced Energy Transfer," directed to related subject matter.

Documents AJ1, AK9-AM9, AG28, AB30, AA32, AN52 and AP55 were cited by an Examiner in related European Patent Appl. No. 99954905.8, filed October 18, 1999, entitled "Integrated Frequency Translation and Selectivity with a Variety of Filter Embodiments," directed to related subject matter.

Documents AM13, AJ14, AK14, AM21, AJ22 and AQ51 were cited by an Examiner in related Japanese Patent Application No. 2000-577,765, filed June 21, 2000, entitled "Method and System for Ensuring Reception of a Communications Signal," directed to related subject matter.

Documents AL14, AM14, AJ15 and AK15 were cited by an Examiner in related Japanese Patent Application No. 2000-577,761, filed June 20, 2000, entitled "Method and System for Frequency Up-conversion," directed to related subject matter.

Documents AL15, AM15, AJ16-AM16, AJ17-AM17 and AK23 were cited by an Examiner in related Japanese Patent Application No. 2000-577,764, filed June 21, 2000, entitled "Applications of Frequency Translation," directed to related subject matter.

Documents AJ18-AL18, AB47, AC47 and AE47-AG47 were cited by an Examiner in related U.S. Patent Appl. No. 09/489,675, filed January 24, 2000, entitled

"Bar Code Scanner Using Universal Frequency Translation Technology for Up-Conversion and Down-Conversion," directed to related subject matter.

Documents AC24 and AD47 were cited by an Examiner in related U.S. Patent Appl. No. 09/376,509, filed August 18, 1999, entitled "Method and System for Ensuring Reception of a Communications Signal," directed to related subject matter.

Documents AH47, AI47, AA48-AE48, AB49, AF51, AG51, AC52, AG54 and AF55 are co-owned patents which are directed to related subject matter.

Documents AI43, AH47 and AH48 were cited by an Examiner in related U.S. Patent Appl. No. 09/293,283, filed April 16, 1999, entitled "Integrated Frequency Translation and Selectivity with a Variety of Filter Embodiments," directed to related subject matter.

Documents AK19 and AF48 were cited in a search report in related PCT Appl. No. PCT/US01/15111, filed October 5, 2001, entitled "Method and Apparatuses Relating to a Universal Platform Module and Enabled by Universal Frequency Translation Technology," directed to related subject matter.

Documents AA38 and AG48 were cited by an Examiner in related U.S. Patent Appl. No. 09/476,091, filed January 3, 2000, entitled "Image-Reject Down-Converter and Embodiments Thereof, Such as the Family Radio Service," directed to related subject matter.

Documents AI48 and AA49 were cited by an Examiner in related U.S. Patent Appl. No. 09/567,963, filed May 10, 2000, entitled "Frequency Synthesizer Using Universal Frequency Translation Technology," directed to related subject matter.

Documents AL13, AM18, AJ19 and AI45 were cited in a search report in related PCT Appl. No. PCT/US00/31659, filed November 20, 2000, entitled "Phase Shifting Applications of Universal Frequency Translation," directed to related subject matter.

Documents AB48 and AC49 were cited by an Examiner in related U.S. Patent Appl. No. 09/489,675, filed January 24, 2000, entitled "Bar Code Scanner Using Universal Frequency Translation Technology for Up-Conversion and Down-Conversion," directed to related subject matter.

Documents AD49-AI49 and AE51 were cited by an Examiner in related U.S. Patent Appl. No. 09/476,092, filed January 3, 2000, entitled "Analog Zero IF FM Decoder and Embodiments Thereof, Such as the Family Radio Service," directed to related subject matter.

Documents AK9, AM9, AE15, AL19, AM19, AB46 and AA50 were cited in a search report in related PCT Appl. No. PCT/US01/08969, filed March 22, 2001, entitled, "Integrated Frequency Translation and Selectivity with a Gain Control Functionality, and Applications Thereof," directed to related subject matter.

Documents AJ16 and AJ20 were cited by an Examiner in related Japanese Patent Appl. No. 2000-577,764, filed June 21, 2000, entitled "Applications of Universal Frequency Translation," directed to related subject matter.

Documents AK20, AL20, AJ21, AK21, AL21, AE42, AP56 and AQ56 were cited in a search report in related PCT Appl. No. PCT/US01/12086, filed April 13, 2001, entitled, "Frequency Converter," directed to related subject matter.

Document AB50 was cited by an Examiner in related U.S. Patent Appl. No. 09/376,509, filed August 18, 1999, entitled "Method and System for Ensuring Reception of a Communications Signal," directed to related subject matter.

Documents AC50-AE50, AG50, AI50 and AC51 were cited by an Examiner in related U.S. Patent Appl. No. 09/476,330, filed January 3, 2000, entitled, "Multi-Mode, Multi-Band Communication System," directed to related subject matter.

Document AF50 was cited by an Examiner in related U.S. Patent Appl. No. 09/567,963, filed May 10, 2000, entitled, "Frequency Synthesizer Using Universal Frequency Translation Technology," directed to related subject matter.

Documents AH50, AA51 and AB51 were cited in by an Examiner in related U.S. Patent Appl. No. 09/526,041, filed March 14, 2000, entitled, "DC Offset, Re-radiation, and I/Q Solutions Using Universal Frequency Translation Technology," directed to related subject matter.

Documents AH51 and AN58-AP58 were cited by an Examiner in related U.S. Patent Appl. No. 09/567,977, filed May 10, 2000, entitled, "Optical Down-converter Using Universal Frequency Translation Technology," directed to related subject matter.

Documents AK9, AE15, AK22-AM22, AA27, AC32, AE45, AI51, AA52 and AQ58 were cited in a search report in related PCT Appl. No. PCT/US01/15555, filed May 16, 2001, entitled, "Apparatus, System, and Method for Down-Converting and Up-Converting Electromagnetic Signals," directed to related subject matter.

Documents AB52 and AJ23 were cited in an Invitation to Pay Additional Fees in PCT Appl. No. PCT/US01/43077, filed November 14, 2001, entitled "Method and

Apparatus for a Parallel Correlator and Applications Thereof," directed to related subject matter.

Documents AD52-AG52 were cited in by an Examiner in related U.S. Patent Application No. 09/986,764, filed November 9, 2001, entitled "Method and Apparatus for Reducing DC Offsets in a Communication System," directed to related subject matter.

Documents AH52, AI52, AA53 and AB53 were cited in a search report in related PCT Application No. PCT/US02/35861, filed November 8, 2002, entitled "Method and Apparatus for Reducing DC Offsets in a Communication System," directed to related subject matter.

Documents AC53-AI53 were cited by an Examiner in related U.S. Patent Application No. 09/476,093, filed January 3, 2000, entitled "Family Radio System with Multi-Mode and Multi-Band Functionality," directed to related subject matter.

Documents AA54-AD54 were cited in a search report in related PCT Application No. PCT/US03/16403, filed May 27, 2003, entitled "Method and Apparatus for DC Offset Removal in a Radio Frequency Communication Channel," directed to related subject matter.

Documents AE54 and AF54 were cited by an Examiner in related U.S. Patent Application No. 09/550,642, filed April 14, 2000, entitled "Method and System for Down-converting an Electromagnetic Signal, and Transforms for Same," directed to related subject matter.

Documents AB48, AD48, AH54, AI54 and AA55-AC55 were cited by an Examiner in related U.S. Patent Application No. 09/548,923, filed April 13, 2000,

entitled "Method and System for Frequency Conversion with Modulation Embodiments," directed to related subject matter.

Documents AD55 and AE55 were cited by an Examiner in related U.S. Patent Application No. 09/543,867, filed April 5, 2000, entitled "Automated Meter Reader Applications of Universal Frequency Translation," directed to related subject matter.

The other documents in the PTO-1449 do not fall within the above categories.

It is noted that some of these documents could be classified in more than one of the above categories.

This statement should not be construed as a representation that information more material to the examination of the present patent application does not exist. The Examiner is specifically requested not to rely solely on the material submitted herewith.

Applicants have checked the appropriate boxes below.

- 1. Statement under 37 C.F.R. 1.704(d). Each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart application and this communication was not received by any individual designated in 37 C.F.R. § 1.56(c) more than thirty days prior to the filing of this information disclosure statement.
- 2. Filing under 37 C.F.R. § 1.97((b)). This Information Disclosure Statement is being filed before the mailing date of a first Office Action on the merits. No statement or fee is required.
- 3. Filing under 37 C.F.R. § 1.97(c). This Information Disclosure Statement is being filed more than three months after the U.S. filing date AND after the mailing date of the first Office Action on the merits, but before the mailing date of a Final Rejection, or Notice of Allowance, or an action that otherwise closes prosecution in the application.
 - a. Statement under 37 C.F.R. § 1.97(e)(1). I hereby state that each item of information contained in this Information Disclosure Statement

was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(1).

- b. Statement under 37 C.F.R. § 1.97(e)(2). I hereby state that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(2).
- c. Attached is our Check No. _____ in the amount of \$ ____ in payment of the fee under 37 C.F.R. § 1.17(p).

4. Filing under 37 C.F.R. § 1.97(d) This Information Disclosure Statement is being filed more than three months after the U.S. filing date and after the mailing date of a Final Rejection or Notice of Allowance, but before payment of the Issue Fee. Enclosed find our Check No. _____ in the amount of \$ ____ in payment of the fee under 37 C.F.R. § 1.17(p); in addition:

- a. Statement under 37 C.F.R. § 1.97(e)(1). I hereby state that each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(1).
- b. Statement under 37 C.F.R. § 1.97(e)(2). I hereby state that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R.

§ 1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(2).

□ 5. The document(s) was/were cited in a search report by a foreign patent office in a counterpart foreign application. Submission of an English language version of the search report that indicates the degree of relevance found by the foreign office is provided in satisfaction of the requirement for a concise explanation of relevance. 1138 OG 37, 38.

■ 6. Concise explanations of the relevance of the non-English language documents AJ1, AK1, AJ6, AK7, AJ8-AL8, AK11-AM11, AJ12, AM13, AJ14-AM14, AJ15-AM15, AJ16-AM16, AJ17-AM17, AJ18-AL18, AJ20-AL20, AK21, AM21, AJ22, AK23, AQ50 and AQ51 appear below:

Document AJ1 (DE 42 37 692 C1) appears to be a receiver for a digital radio signal. The corresponding U.S. Patent No. 5,493,721 is enclosed as document AG28.

Document AK1 (EP 0 035 166 A1) appears to describe a digitized receiver. A copy of the English language abstract of document AK1 is enclosed as document AQ8.

Document AJ6 (EP 0 785 635 A1) appears to describe a method and apparatus for frequency diversity transmission using a plurality of uncorrelated carriers. A copy of the English language abstract of document AJ6 is enclosed as document AP8.

Document AK7 (FR 2 743 231 A1) is the corresponding French application of document AJ6 (EP 0 785 635 A1), which is described above.

Document AJ8 (JP 2-39632) appears to describe a transmitter for frequency diversity. A copy of the English language abstract of document AJ8 is enclosed as document AO8.

Document AK8 (JP 2-131629) appears to describe a transmitter-receiver for frequency diversity. A copy of the English language abstract of document AK8 is enclosed as document AN8.

Document AL8 (JP 2-276351) appears to describe an FSK demodulating circuit.

A copy of the English language abstract of document AL8 is enclosed as document AR7.

Document AK11 (FR 2245130) appears to describe a converter. A partial English language translation of document AK11 is enclosed as document AP50.

Document AL11 (DE 3541031) appears to describe a method and device for demodulating high-frequency modulated signals. An English translation of document AL11 is enclosed as document AR50.

Document AM11 (EP 0 732 803) appears to describe a procedure and device for demodulation by sampling. An English translation of document AM11 is enclosed as document AN51.

Document AJ12 (DE 19735798) appears to describe a transceiver. An English translation of document AJ12 is enclosed as document AP51.

Document AM13 (JP 56-114451) appears to describe a system for diversity radio transmission. The corresponding U.S. Patent No. 4,363,132 is enclosed as document AF8.

Document AJ14 (JP 8-32556) appears to describe a data transmitter-receiver. A copy of the English language abstract of document AJ14 is enclosed as document AO52.

Document AK14 (JP 8-139524) appears to describe a frequency converting circuit and radio communication device. A copy of the English language abstract of document AK14 is enclosed as document AP52.

Document AL14 (JP 59-144249) appears to describe a pulse signal transmission system. A copy of the English language abstract of document AL14 is enclosed as document AQ52.

Document AM14 (JP 63-54002) appears to describe a microwave burst signal generator which incorporates a FET frequency multiplier. A copy of the English language abstract of document AM14 is enclosed as document AR52.

Document AJ15 (JP 6-237276) appears to describe a quadrature modulator. A copy of the English language abstract of document AJ15 is enclosed as document AN53.

Document AK15 (JP 8-23359) appears to describe a digital quadrature modulation device. A copy of the English language abstract of document AK15 is enclosed as document AO53.

Document AL15 (JP 47-2314) appears to describe a demodulator. An English language translation of document AL15 is enclosed as document AP53.

Document AM15 (JP 58-7903) appears to describe a switched capacitor modulator. A partial English language translation of document AM15 is enclosed as document AQ53.

Document AJ16 (JP 58-133004) appears to describe an amplitude detector. A copy of the English language abstract of document AJ16 is enclosed as document AR53.

Document AK16 (JP 60-58705) appears to describe a frequency converting circuit. A copy of the English language abstract of document AK16 is enclosed as document AN54.

Document AL16 (JP 4-123614) appears to describe a level converting circuit. A copy of the English language abstract of document AL16 is enclosed as document AO54.

Document AM16 (JP 4-127601) appears to describe a frequency conversion circuit. A copy of the English language abstract of document AM16 is enclosed as document AP54.

Document AJ17 (JP 5-175730) appears to describe a time division direct receiver. A copy of the English language abstract of document AJ17 is enclosed as document AQ54.

Document AK17 (JP 5-175734) appears to describe an FM demodulator. A copy of the English language abstract of document AK17 is enclosed as document AR54.

Document AL17 (JP 7-154344) appears to describe a receiver for receiving modulated carrier signals and an IQ mixer/demodulator using its receiving

constitution. A copy of the English language abstract of document AL17 is enclosed as document AN55.

Document AM17 (JP 7-307620) appears to describe a bottom detection circuit.

A copy of the English language abstract of document AM17 is enclosed as document AO55.

Document AJ18 (JP 55-66057) appears to describe a bar-code detection circuit.

A copy of the English language abstract of document AJ18 is enclosed as document AQ55.

Document AK18 (JP 63-65587) appears to describe a wireless light pen device.

A copy of the English language abstract of document AK18 is enclosed as document AR55.

Document AL18 (JP 63-153691) appears to describe a data transfer for a semiconductor data carrier system. A copy of the English language abstract of document AL18 is enclosed as document AN56.

Document AJ20 (JP 60-130203) appears to describe a frequency converter. A copy of the English language abstract of document AJ20 is enclosed as document AO56.

Document AK20 (DE 196 27 640 A1) appears to describe a mixer. Document AK20 is a counterpart German application of U.S. Patent No. 5,680,078, which was cited in Applicants' Information Disclosure Statement filed on September 6, 2002 in connection with the above-captioned application.

Document AL20 (EP 0 087 336 A1) appears to describe a transistorized mixer for microwave transmitters. The granted version of document AL20 is cited as document AM20 (EP 0 087 336 B1) and contains an English-language version of the claims.

Document AK21 (FR 2 669 787 A1) appears to describe a symmetrical super high frequency mixer. A copy of the English-language abstract of document AK21 is enclosed as document AR56.

Document AM21 (JP 61-30821) appears to describe a squelch device. A copy of the English-language abstract of document AL21 is enclosed as document AP57.

Document AJ22 (JP 5-327356) appears to describe a frequency converter. A copy of the English-language abstract of document AJ22 is enclosed as document AQ57.

Document AK23 (JP 9-36664) appears to describe a frequency conversion circuit. A copy of the English-language abstract of document AK23 is enclosed as document AR58.

Document AQ50 (Fest *et al.*) appears to discuss analog-digital converters. An English translation of document AQ50 is enclosed as document AO51.

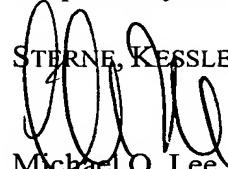
Document AQ51 (Miki *et al.*) appears to describe modulation systems. A partial English-language translation of document AQ51 is enclosed as document AR51.

- 7. Copies of documents AC46-AI46, AA47-AI47, AA48-AI48, AA49-AI49, AA50-AI50, AA51-AI51, AA52-AI52, AA53-AI53, AA54-AI54, AA55-AF55, AM13, AJ14-AM14, AJ15-AM15, AJ16-AM16, AJ17-AM17, AJ18-AM18, AJ19-AM19, AJ20-AM20, AJ21-AM21, AJ22-AM22, AJ23, AK23, AQ51, AR51, AN52-AR52, AN53-AR53, AN54-AR54, AN55-AR55, AN56-AR56, AN57-AR57 and AN58-AR58 are enclosed. Copies of the remaining documents listed were cited by the Patent Office or submitted to the Patent Office in Information Disclosure Statements that comply with 37 C.F.R. § 1.98(a)-(c) in Application No. 09/379,497, filed August 23, 1999, now U.S. Patent No. 6,353,735, which is relied upon for an earlier filing date under 35 U.S.C. § 120. Thus, copies of these documents are not attached. 37 C.F.R. § 1.98(d).

It is respectfully requested that the Examiner initial and return a copy of the enclosed PTO-1449, and indicate in the official file wrapper of this patent application that the documents have been considered.

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

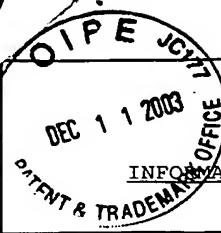

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FORM PTO-1449

INFORMATION DISCLOSURE STATEMENT

ATTY. DOCKET NO.
1744.0020007APPLICATION NO.
10/086,367APPLICANTS
Sorrells et al.FILING DATE
March 4, 2002GROUP
2682

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA1	2,057,613	10/1936	Gardner			RECEIVED
	AB1	2,241,078	05/1941	Vreeland			DEC 15 2003
	AC1	2,270,385	01/1942	Skillman			
	AD1	2,283,575	05/1942	Roberts			
	AE1	2,358,152	09/1944	Earp			Technology Center 2600
	AF1	2,410,350	10/1946	Labin et al.			
	AG1	2,451,430	10/1948	Barone			
	AH1	2,462,069	02/1949	Chatterjea et al.			
	AI1	2,462,181	02/1949	Grosselfinger			

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ1	DE 42 37 692 C1	03/1994	DE			No
	AK1	EP 0 035 166 A1	09/1981	EP			No
	AL1	EP 0 193 899 B1	06/1990	EP			N/A
	AM1	EP 0 380 351 A2	08/1990	EP			N/A

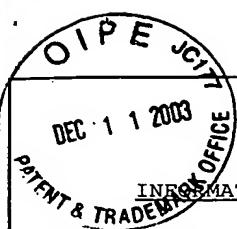
OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	1	Aghvami, H. et al., "Land Mobile Satellites Using the Highly Elliptic Orbits- The UK T-SAT Mobile Payload," <i>Fourth International Conference on Satellite Systems for Mobile Communications and Navigation</i> , IEE, pp. 147-153 (October 17-19, 1988).
	AO	1	Akers, N.P. et al., "RF Sampling Gates: a Brief Review," <i>IEE Proceedings</i> , IEE, Vol. 133, Part A, No. 1, pp. 45-49 (January 1986).
	AP	1	Al-Ahmad, H.A.M. et al., "Doppler Frequency Correction for a Non-Geostationary Communications Satellite. Techniques for CERS and T-SAT," <i>Electronics Division Colloquium on Low Noise Oscillators and Synthesizers</i> , IEE, pp. 4/1-4/5 (January 23, 1986).
	AQ	1	Ali, I. et al., "Doppler Characterization for LEO Satellites," <i>IEEE Transactions on Communications</i> , IEEE, Vol. 46, No. 3, pp. 309-313 (March 1998).
	AR	1	Allan, D.W., "Statistics of Atomic Frequency Standards," <i>Proceedings Of The IEEE Special Issue on Frequency Stability</i> , IEEE, pp. 221-230 (February 1966).

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INFORMATION DISCLOSURE STATEMENT F O R M P T O - 1 4 4 9			ATTY. DOCKET NO. 1744.0020007	APPLICATION NO. 10/086,367
			APPLICANTS Sorrells et al.	
			FILING DATE March 4, 2002	GROUP 2682

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA2	2,472,798	06/1949	Fredendall			
	AB2	2,497,859	02/1950	Boughtwood et al.			
	AC2	2,499,279	02/1950	Peterson			
	AD2	2,802,208	08/1957	Hobbs			
	AE2	2,985,875	05/1961	Grisdale et al.			
	AF2	3,023,309	02/1962	Foulkes			
	AG2	3,069,679	12/1962	Sweeney et al.			
	AH2	3,104,393	09/1963	Vogelman			
	AI2	3,114,106	12/1963	McManus			

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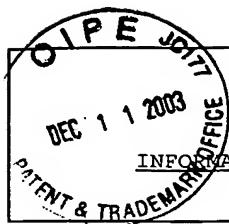
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	AJ2	EP 0 380 351 A3	02/1991	EP			N/A
	AK2	EP 0 411 840 A2	02/1991	EP			N/A
	AL2	EP 0 411 840 A3	07/1991	EP			N/A
	AM2	EP 0 411 840 B1	10/1995	EP			N/A

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AN	2	Allstot, D.J. et al., "MOS Switched Capacitor Ladder Filters," <i>IEEE Journal of Solid-State Circuits</i> , IEEE, Vol. SC-13, No. 6, pp. 806-814 (December 1978).
AO	2	Allstot, D.J. and Black Jr. W.C., "Technological Design Considerations for Monolithic MOS Switched-Capacitor Filtering Systems," <i>Proceedings of the IEEE</i> , IEEE, Vol. 71, No. 8, pp. 967-986 (August 1983).
AP	2	Alouini, M. et al., "Channel Characterization and Modeling for Ka-Band Very Small Aperture Terminals," <i>Proceedings Of the IEEE</i> , IEEE, Vol. 85, No. 6, pp. 981-997 (June 1997).
AQ	2	Andreyev, G.A. and Ogarev, S.A., "Phase Distortions of Keyed Millimeter-Wave Signals in the Case of Propagation in a Turbulent Atmosphere," <i>Telecommunications and Radio Engineering</i> , Scripta Technica, Vol. 43, No. 12, pp. 87-90 (December 1988).
AR	2	Antonetti, A. et al., "Optoelectronic Sampling in the Picosecond Range," <i>Optics Communications</i> , North-Holland Publishing Company, Vol. 21, No. 2, pp. 211-214 (May 1977).

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	AA3	3,118,117	01/1964	King et al.			
	AB3	3,226,643	12/1965	McNair			
	AC3	3,258,694	06/1966	Shepherd			
	AD3	3,383,598	05/1968	Sanders			
	AE3	3,384,822	05/1968	Miyagi			DEC 15 2003
	AF3	3,454,718	07/1969	Perreault			
	AG3	3,523,291	08/1970	Pierret			Technology Center 2600
	AH3	3,548,342	12/1970	Maxey			
	AI3	3,555,428	01/1971	Perreault			

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	AK3	EP 0 423 718 A3	08/1992	EP			N/A
	AL3	EP 0 486 095 A1	05/1992	EP			N/A
	AM3	EP 0 486 095 B1	02/1997	EP			N/A

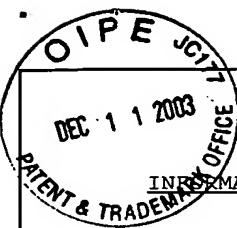
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AN	3	Austin, J. et al., "Doppler Correction of the Telecommunication Payload Oscillators in the UK T-SAT," <i>18th European Microwave Conference</i> , Microwave Exhibitions and Publishers Ltd., pp. 851-857 (September 12 - 15, 1988).
AO	3	Auston, D.H., "Picosecond optoelectronic switching and gating in silicon," <i>Applied Physics Letters</i> , American Institute of Physics, Vol. 26, No. 3, pp. 101-103 (February 1, 1975).
AP	3	Baher, H., "Transfer Functions for Switched-Capacitor and Wave Digital Filters," <i>IEEE Transactions on Circuits and Systems</i> , IEEE Circuits and Systems Society, Vol. CAS-33, No. 11, pp. 1138-1142 (November 1986).
AQ	3	Baines, R., "The DSP Bottleneck," <i>IEEE Communications Magazine</i> , IEEE Communications Society, pp. 46-54 (May 1995).
AR	3	Banjo, O.P. and Vilar, E., "Binary Error Probabilities on Earth-Space Links Subject to Scintillation Fading," <i>Electronics Letters</i> , IEE, Vol. 21, No. 7, pp. 296-297 (March 28, 1985).

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	AA4	3,617,892	11/1971	Hawley et al.			
	AB4	3,621,402	11/1971	Gardner			
	AC4	3,623,160	11/1971	Giles et al.			
	AD4	3,626,417	12/1971	Gilbert			
	AE4	3,629,696	12/1971	Bartelink			DEC 15 2003
	AF4	3,662,268	05/1972	Gans et al.			
	AG4	3,689,841	09/1972	Bello et al.			Technology Center 2600
	AH4	3,714,577	01/1973	Hayes			
	AI4	3,717,844	02/1973	Barret et al.			

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	AJ4	EP 0 512 748 A2	11/1992	EP			N/A
	AK4	EP 0 512 748 A3	07/1993	EP			N/A
	AL4	EP 0 512 748 B1	11/1998	EP			N/A
	AM4	EP 0 548 542 A1	06/1993	EP			N/A

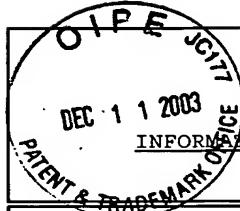
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AN	4	Banjo, O.P. and Vilar, E., "The Dependence of Slant Path Amplitude Scintillations on Various Meteorological Parameters," <i>Fifth International Conference on Antennas and Propagation (ICAP 87) Part 2: Propagation</i> , IEE, pp. 277-280 (March 30 - April 2, 1987).
AO	4	Banjo, O.P. and Vilar, E. "Measurement and Modeling of Amplitude Scintillations on Low-Elevation Earth-Space Paths and Impact on Communication Systems," <i>IEEE Transactions on Communications</i> , IEEE Communications Society, Vol. COM-34, No. 8, pp. 774-780 (August 1986).
AP	4	Banjo, O.P. et al., "Tropospheric Amplitude Spectra Due to Absorption and Scattering in Earth-Space Paths," <i>Fourth International Conference on Antennas and Propagation (ICAP 85)</i> , IEE, pp. 77-82 (April 16-19, 1985).
AQ	4	Basili, P. et al., "Case Study of Intense Scintillation Events on the OTS Path," <i>IEEE Transactions on Antennas and Propagation</i> , IEEE, Vol. 38, No. 1, pp. 107-113 (January 1990).
AR	4	Basili, P. et al., "Observation of High C ² and Turbulent Path Length on OTS Space-Earth Link," <i>Electronics Letters</i> , IEE, Vol. 24, No. 17, pp. 1114-1116 (August 18, 1988).

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA5	3,735,048	05/1973	Tomsa et al.			
	AB5	3,806,811	04/1974	Thompson			
	AC5	3,868,601	02/1975	MacAfee			
	AD5	3,949,300	04/1976	Sadler			
	AE5	3,967,202	06/1976	Batz			
	AF5	3,980,945	09/1976	Bickford			DEC 15 2003
	AG5	3,987,280	10/1976	Bauer			
	AH5	3,991,277	11/1976	Hirata			
	AI5	4,003,002	01/1977	Snijders et al.			

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	AJ5	EP 0 632 288 A2	01/1995	EP			N/A
	AK5	EP 0 632 288 A3	07/1996	EP			N/A
	AL5	EP 0 696 854 A1	02/1996	EP			N/A
	AM5	EP 0 782 275 A2	07/1997	EP			N/A

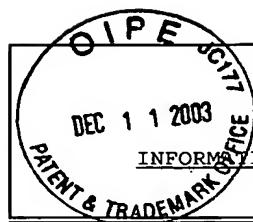
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AN	5	Blakey, J.R. et al., "Measurement of Atmospheric Millimetre-Wave Phase Scintillations in an Absorption Region," <i>Electronics Letters</i> , IEE, Vol. 21, No. 11, pp. 486-487 (May 23, 1985).
AO	5	Burgueño, A. et al., "Influence of rain gauge integration time on the rain rate statistics used in microwave communications," <i>annales des télécommunications</i> , International Union of Radio Science, pp. 522-527 (September/October 1988).
AP	5	Burgueño, A. et al., "Long-Term Joint Statistical Analysis of Duration and Intensity of Rainfall Rate with Application to Microwave Communications," <i>Fifth International Conference on Antennas and Propagation (ICAP 87) Part 2: Propagation</i> , IEE, pp. 198-201 (March 30 - April 2, 1987).
AQ	5	Burgueño, A. et al., "Long Term Statistics of Precipitation Rate Return Periods in the Context of Microwave Communications," <i>Sixth International Conference on Antennas and Propagation (ICAP 89) Part 2: Propagation</i> , IEE, pp. 297-301 (April 4-7, 1989).
AR	5	Burgueño, A. et al., "Spectral Analysis of 49 Years of Rainfall Rate and Relation to Fade Dynamics," <i>IEEE Transactions on Communications</i> , IEEE Communications Society, Vol. 38, No. 9, pp. 1359-1366 (September 1990).

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	AA6	4,013,966	03/1977	Campbell			
	AB6	4,019,140	04/1977	Swerdlow			
	AC6	4,035,732	07/1977	Lohrmann			
	AD6	4,047,121	09/1977	Campbell			
	AE6	4,066,841	01/1978	Young			DEC 15 2003
	AF6	4,066,919	01/1978	Huntington			
	AG6	4,081,748	03/1978	Batz			Technology Center 2600
	AH6	4,130,765	12/1978	Arakelian et al.			
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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ6	EP 0 785 635 A1	07/1997	EP			No
	AK6	EP 0 795 978 A2	09/1997	EP			N/A
	AL6	EP 0 837 565 A1	04/1998	EP			N/A
	AM6	EP 0 862 274 A1	09/1998	EP			N/A

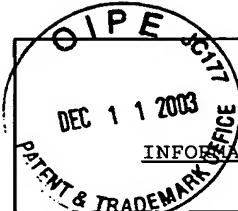
OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

AN	6	Catalan, C. and Vilar, E., "Approach for satellite slant path remote sensing," <i>Electronics Letters</i> , IEE, Vol. 34, No. 12, pp. 1238-1240 (June 11, 1998).
AO	6	Chan, P. et al., "A Highly Linear 1-GHz CMOS Downconversion Mixer," <i>European Solid State Circuits Conference</i> , IEEE Communication Society, pp. 210-213 (September 22-24, 1993).
AP	6	Copy of Declaration of Michael J. Bultman filed in patent application Ser. No. 09/176,022, which is directed to related subject matter, 2 pages.
AQ	6	Copy of Declaration of Robert W. Cook filed in patent application Ser. No. 09/176,022, which is directed to related subject matter, 2 pages.
AR	6	Copy of Declaration of Alex Holtz filed in patent application Ser. No. 09/176,022, which is directed to related subject matter, 3 pages.

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U.S. PATENT DOCUMENTS

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	AA7	4,142,155	02/1979	Adachi			
	AB7	4,170,764	10/1979	Salz et al.			
	AC7	4,204,171	05/1980	Sutphin, Jr.			
	AD7	4,210,872	07/1980	Gregorian			
	AE7	4,245,355	01/1981	Pascoe et al.			DEC 15 2003
	AF7	4,253,066	02/1981	Fisher et al.			
	AG7	4,253,069	02/1981	Nossek			Technology Center 2600
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	AJ7	EP 0 874 499 A2	10/1998	EP			N/A
	AK7	FR 2 743 231 A1	07/1997	FR			No
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	AM7	GB 2 215 945 A	09/1989	GB			N/A

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

AN	7	Copy of Declaration of Richard C. Looke filed in patent application Ser. No. 09/176,022, which is directed to related subject matter, 2 pages.
AO	7	Copy of Declaration of Charley D. Moses, Jr. filed in patent application Ser. No. 09/176,022, which is directed to related subject matter, 2 pages.
AP	7	Copy of Declaration of Jeffrey L. Parker and David F. Sorrells, with attachment Exhibit 1, filed in patent application Ser. No. 09/176,022, which is directed to related subject matter, 130 pages.
AQ	7	Dewey, R.J. and Collier, C.J., "Multi-Mode Radio Receiver," <i>Electronics Division Colloquium on Digitally Implemented Radios</i> , IEE, pp. 3/1-3/5 (October 18, 1985).
AR	7	DIALOG File 347 (JAPIO) English Language Patent Abstract for JP 2-276351, 1 page (November 13, 1990 - Date of publication of application).

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	AA8	4,320,536	03/1982	Dietrich			
	AB8	4,346,477	08/1982	Gordy			
	AC8	4,355,401	10/1982	Ikoma et al.			
	AD8	4,356,558	10/1982	Owen et al.			
	AE8	4,360,867	11/1982	Gonda			REC'D IV-1 DEC 15 2003
	AF8	4,363,132	12/1982	Collin			
	AG8	4,365,217	12/1982	Berger et al.			Technology Center 2600
	AH8	4,370,572	01/1983	Cosand et al.			
	AI8	4,389,579	06/1983	Stein			

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	AM8	WO 80/01633 A1	08/1980	PCT			N/A

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	AN	8	DIALOG File 347 (JAPIO) English Language Patent Abstract for JP 2-131629, 1 page (May 21, 1990 - Date of publication of application).
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	AP	8	DIALOG File 348 (European Patents) English Language Patent Abstract for EP 0 785 635 A1, 3 pages (December 26, 1996 - Date of publication of application).
	AQ	8	DIALOG File 348 (European Patents) English Language Patent Abstract for EP 35166 A1, 2 pages (February 18, 1981 - Date of publication of application).
	AR	8	"DSO takes sampling rate to 1 Ghz," <i>Electronic Engineering</i> , Morgan Grampian Publishers, Vol. 59, No. 723, pp. 77 and 79 (March 1987).

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	AA9	4,392,255	07/1983	Del Giudice			
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	AF9	4,479,226	10/1984	Prabhu et al.			Technology Center 2000
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	AH9	4,481,642	11/1984	Hanson			
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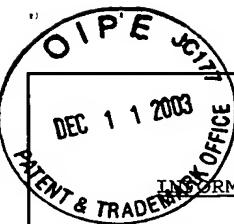
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AN	9	Erdi, G. and Henneuse, P.R., "A Precision FET-Less Sample-and-Hold with High Charge-to-Droop Current Ratio," <i>IEEE Journal of Solid-State Circuits</i> , IEEE, Vol. SC-13, No. 6, pp. 864-873 (December 1978).
AO	9	Faulkner, N.D. and Vilar, E., "Subharmonic Sampling for the Measurement of Short Term Stability of Microwave Oscillators," <i>IEEE Transactions on Instrumentation and Measurement</i> , IEEE, Vol. IM-32, No. 1, pp. 208-213 (March 1983).
AP	9	Faulkner, N.D. et al., "Sub-Harmonic Sampling for the Accurate Measurement of Frequency Stability of Microwave Oscillators," <i>CPEM 82 Digest: Conference on Precision Electromagnetic Measurements</i> , IEEE, pp. M-10 and M-11 (1982).
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AR	9	Filip, M. and Vilar, E., "Optimum Utilization of the Channel Capacity of a Satellite Link in the Presence of Amplitude Scintillations and Rain Attenuation," <i>IEEE Transactions on Communications</i> , IEEE Communications Society, Vol. 38, No. 11, pp. 1958-1965 (November 1990).

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	AA10	4,504,803	03/1985	Lee et al.			
	AB10	4,517,519	05/1985	Mukaiyama			
	AC10	4,517,520	05/1985	Ogawa			
	AD10	4,518,935	05/1985	van Roermund			
	AE10	4,521,892	06/1985	Vance et al.			RECEIVED DEC 15 2003
	AF10	4,563,773	07/1986	Dixon, Jr. et al.			
	AG10	4,577,157	03/1986	Reed			Technology Center 2500
	AH10	4,583,239	04/1986	Vance			
	AI10	4,591,736	05/1986	Hirao et al.			

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ10	WO 97/38490 A1	10/1997	PCT			N/A
	AK10	WO 98/00953 A1	01/1998	PCT			N/A
	AL10	WO 98/24201 A1	06/1998	PCT			N/A
	AM10	EP 0 099 265 A1	01/1984	EP			N/A

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	AN	10	Fukahori, K., "A CMOS Narrow-Band Signaling Filter with Q Reduction," <i>IEEE Journal of Solid-State Circuits</i> , IEEE, Vol. SC-19, No. 6, pp. 926-932 (December 1984).
	AO	10	Fukuchi, H. and Otsu, Y., "Available time statistics of rain attenuation on earth-space path," <i>IEE Proceedings-H: Microwaves, Antennas and Propagation</i> , IEE, Vol. 135, Pt. H, No. 6, pp. 387-390 (December 1988).
	AP	10	Gibbins, C.J. and Chadha, R., "Millimetre-wave propagation through hydrocarbon flame," <i>IEE Proceedings</i> , IEE, Vol. 134, Pt. H, No.2 , pp. 169-173 (April 1987).
	AQ	10	Gilchrist, B. et al., "Sampling hikes performance of frequency synthesizers," <i>Microwaves & RF</i> , Hayden Publishing, Vol. 23, No. 1, pp. 93-94 and 110 (January 1984).
	AR	10	Gossard, E.E., "Clear weather meteorological effects on propagation at frequencies above 1 Ghz," <i>Radio Science</i> , American Geophysical Union, Vol. 16, No. 5, pp. 589-608 (September - October 1981).

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA11	4,602,220	07/1986	Kurihara			
	AB11	4,603,300	07/1986	Welles, II et al.			
	AC11	4,612,464	09/1986	Ishikawa et al.			
	AD11	4,612,518	09/1986	Gans et al.			
	AE11	4,616,191	10/1986	Galani et al.			DEC 15 2003
	AF11	4,621,217	11/1986	Saxe et al.			
	AG11	4,628,517	12/1986	Schwarz et al.			Technology Center 2600
	AH11	4,634,998	01/1987	Crawford			
	AI11	4,648,021	03/1987	Alberkrack			

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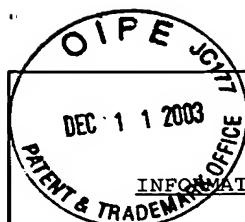
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ11	EP 0 560 228 A1	09/1993	EP			N/A
	AK11	FR 2 245 130	04/1975	FR			Yes (See AP50)
	AL11	DE 35 41 031 A1	05/1986	DE			Yes (See AR50)
	AM11	EP 0 732 803 A1	09/1996	EP			Yes (See AN51)

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AN	11	Gregorian, R. et al., "Switched-Capacitor Circuit Design," <i>Proceedings of the IEEE</i> , IEEE, Vol. 71, No. 8, pp. 941-966 (August 1983).
AO	11	Groshong et al., "Undersampling Techniques Simplify Digital Radio," <i>Electronic Design</i> , Penton Publishing, pp. 67-68, 70, 73-75 and 78 (May 23, 1991).
AP	11	Grove, W.M., "Sampling for Oscilloscopes and Other RF Systems: Dc through X-Band," <i>IEEE Transactions on Microwave Theory and Techniques</i> , IEEE, pp. 629-635 (December 1966).
AQ	11	Haddon, J. et al., "Measurement of Microwave Scintillations on a Satellite Down-Link at X-Band," <i>Antennas and Propagation</i> , IEE, pp. 113-117 (1981).
AR	11	Haddon, J. and Vilar, E., "Scattering Induced Microwave Scintillations from Clear Air and Rain on Earth Space Paths and the Influence of Antenna Aperture," <i>IEEE Transactions on Antennas and Propagation</i> , IEEE, Vol. AP-34, No. 5, pp. 646-657 (May 1986).

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	AA12	4,651,034	03/1987	Sato			
	AB12	4,675,882	06/1987	Lillie et al.			
	AC12	4,688,253	08/1987	Gumm			
	AD12	4,716,376	12/1987	Daudelin			
	AE12	4,716,388	12/1987	Jacobs			DEC 15 2003
	AF12	4,718,113	01/1988	Rother et al.			
	AG12	4,726,041	02/1988	Prohaska et al.			Technology Center 2600
	AH12	4,733,403	03/1988	Simone			
	AI12	4,734,591	03/1988	Ichitsubo			

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	AJ12	DE 197 35 798 C1	07/1998	DE			Yes (See AP51)
	AK12	WO 98/40968 A2&A3	09/1998	PCT			N/A
	AL12	EP 0 529 836 A1	03/1993	EP			N/A
	AM12	EP 0 795 955 A2&A3	09/1997	EP			N/A

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AN	<u>12</u>	Hafdallah, H. et al., "2-4 Ghz MESFET Sampler," <i>Electronics Letters</i> , IEE, Vol. 24, No. 3, pp. 151-153 (February 4, 1988).
AO	<u>12</u>	Herben, M.H.A.J., "Amplitude and Phase Scintillation Measurements on 8-2 km Line-Of-Sight Path at 30 Ghz," <i>Electronics Letters</i> , IEE, Vol. 18, No. 7, pp. 287-289 (April 1, 1982).
AP	<u>12</u>	Hewitt, A. et al., "An 18 Ghz Wideband LOS Multipath Experiment," <i>International Conference on Measurements for Telecommunication Transmission Systems - MTTS 85</i> , IEE, pp. 112-116 (November 27-28, 1985)
AQ	<u>12</u>	Hewitt, A. et al., "An Autoregressive Approach to the Identification of Multipath Ray Parameters from Field Measurements," <i>IEEE Transactions on Communications</i> , IEEE Communications Society, Vol. 37, No. 11, pp. 1136-1143 (November 1989).
AR	<u>12</u>	Hewitt, A. and Vilar, E., "Selective fading on LOS Microwave Links: Classical and Spread-Spectrum Measurement Techniques," <i>IEEE Transactions on Communications</i> , IEEE Communications Society, Vol. 36, No. 7, pp. 789-796 (July 1988).

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	AA13	4,737,969	04/1988	Steel et al.			
	AB13	4,743,858	05/1988	Everard			
	AC13	4,745,463	05/1988	Lu			
	AD13	4,751,468	06/1988	Agoston			
	AE13	4,757,538	07/1988	Zink			
	AF13	4,768,187	08/1988	Marshall			
	AG13	4,769,612	09/1988	Tamakoshi et al.			
	AH13	4,785,463	11/1988	Janc et al.			
	AI13	4,791,584	12/1988	Greivenkamp, Jr.			

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	AJ13	EP 0 817 369 A2&A3	01/1998	EP			N/A
	AK13	WO 91/18445 A1	11/1991	PCT			N/A
	AL13	WO 99/23755 A1	05/1999	PCT			N/A
	AM13	JP 56-114451 A	09/1981	JP			No

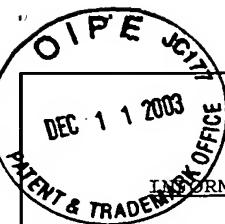
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AN	<u>13</u>	Hospitalier, E., "Instruments for Recording and Observing Rapidly Varying Phenomena," <i>Science Abstracts</i> , IEE, Vol. VII, pp. 22-23 (1904).
AO	<u>13</u>	Howard, I.M. and Swansson, N.S., "Demodulating High Frequency Resonance Signals for Bearing Fault Detection," <i>The Institution of Engineers Australia Vibration and Noise Conference</i> , Institution of Engineers, Australia, pp. 115-121 (September 18-20, 1990).
AP	<u>13</u>	Hu, X., <i>A Switched-Current Sample-and-Hold Amplifier for FM Demodulation</i> , Thesis for Master of Applied Science, Dept. of Electrical and Computer Engineering, University of Toronto, UMI Dissertation Services, pp. 1-64 (1995).
AQ	<u>13</u>	Hung, H-L. A. et al., "Characterization of Microwave Integrated Circuits Using An Optical Phase-Locking and Sampling System," <i>IEEE MTT-S Digest</i> , IEEE, pp. 507-510 (1991).
AR	<u>13</u>	Hurst, P.J., "Shifting the Frequency Response of Switched-Capacitor Filters by Nonuniform Sampling," <i>IEEE Transactions on Circuits and Systems</i> , IEEE Circuits and Systems Society, Vol. 38, No. 1, pp. 12-19 (January 1991).

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA14	4,801,823	01/1989	Yokoyama			
	AB14	4,806,790	02/1989	Sone			
	AC14	4,810,904	03/1989	Crawford			
	AD14	4,810,976	03/1989	Cowley et al.			
	AE14	4,811,362	03/1989	Yester, Jr. et al.			
	AF14	4,819,252	04/1989	Christopher			
	AG14	4,833,445	05/1989	Buchele			
	AH14	4,862,121	08/1989	Hochschild et al.			
	AI14	4,868,654	09/1989	Juri et al.			

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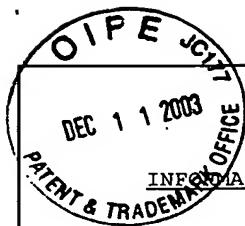
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ14	JP 8-32556 A	02/1996	JP			No
	AK14	JP 8-139524 A	05/1996	JP			No
	AL14	JP 59-144249 A	08/1984	JP			No
	AM14	JP 63-54002 A	03/1988	JP			No

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AN	<u>14</u>	Itakura, T., "Effects of the sampling pulse width on the frequency characteristics of a sample-and-hold circuit," <i>IEE Proceedings Circuits, Devices and Systems</i> , IEE, Vol. 141, No. 4, pp. 328-336 (August 1994).
AO	<u>14</u>	Janssen, J.M.L., "An Experimental 'Stroboscopic' Oscilloscope for Frequencies up to about 50 Mc/s: I. Fundamentals," <i>Philips Technical Review</i> , Philips Research Laboratories, Vol. 12, No. 2, pp. 52-59 (August 1950).
AP	<u>14</u>	Janssen, J.M.L. and Michels, A.J., "An Experimental 'Stroboscopic' Oscilloscope for Frequencies up to about 50 Mc/s: II. Electrical Build-Up," <i>Philips Technical Review</i> , Philips Research Laboratories, Vol. 12, No. 3, pp. 73-82 (September 1950).
AQ	<u>14</u>	Jondral, V.F. et al., "Doppler Profiles for Communication Satellites," <i>Frequenz</i> , Herausberger, pp. 111-116 (May-June 1996).
AR	<u>14</u>	Kaleh, G.K., "A Frequency Diversity Spread Spectrum System for Communication in the Presence of In-band Interference," 1995 <i>IEEE Globecom</i> , IEEE Communications Society, pp. 66-70 (1995).

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA15	4,870,659	09/1989	Oishi et al.			
	AB15	4,871,987	10/1989	Kawase			
	AC15	4,885,587	12/1989	Wiegand et al.			
	AD15	4,885,756	12/1989	Fontanes et al.			
	AE15	4,888,557	12/1989	Puckette, IV et al.			DEC 15 2003
	AF15	4,890,302	12/1989	Muijlwijk			
	AG15	4,893,316	01/1990	Janc et al.			Technology Center 2600
	AH15	4,893,341	01/1990	Gehring			
	AI15	4,894,766	01/1990	De Agro			

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ15	JP 6-237276 A	08/1994	JP			No
	AK15	JP 8-23359 A	01/1996	JP			No
	AL15	JP 47-2314 A	02/1972	JP			Yes (Doc. AP53)
	AM15	JP 58-7903 A	01/1983	JP			Partial (Doc. AQ53)

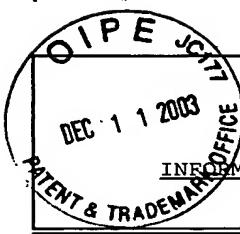
OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

AN	15	Karasawa, Y. et al., "A New Prediction Method for Tropospheric Scintillation on Earth-Space Paths," <i>IEEE Transactions on Antennas and Propagation</i> , IEEE Antennas and Propagation Society, Vol. 36, No. 11, pp. 1608-1614 (November 1988).
AO	15	Kirsten, J. and Fleming, J., "Undersampling reduces data-acquisition costs for select applications," <i>EDN</i> , Cahners Publishing, Vol. 35, No. 13, pp. 217-222, 224, 226-228 (June 21, 1990).
AP	15	Lam, W.K. et al., "Measurement of the Phase Noise Characteristics of an Unlocked Communications Channel Identifier," <i>Proceedings Of the 1993 IEEE International Frequency Control Symposium</i> , IEEE, pp. 283-288 (June 2-4, 1993).
AQ	15	Lam, W.K. et al., "Wideband sounding of 11.6 Ghz transhorizon channel," <i>Electronics Letters</i> , IEE, Vol. 30, No. 9, pp. 738-739 (April 28, 1994).
AR	15	Larkin, K.G., "Efficient demodulator for bandpass sampled AM signals," <i>Electronics Letters</i> , IEE, Vol. 32, No. 2, pp. 101-102 (January 18, 1996).

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U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA16	4,896,152	01/1990	Tiemann			
	AB16	4,902,979	02/1990	Puckette, IV			
	AC16	4,908,579	03/1990	Tawfik et al.			
	AD16	4,910,752	03/1990	Yester, Jr. et al.			
	AE16	4,914,405	04/1990	Wells			
	AF16	4,920,510	04/1990	Senderowicz et al.			
	AG16	4,922,452	05/1990	Larsen et al.			
	AH16	4,931,921	06/1990	Anderson			
	AI16	4,944,025	07/1990	Gehring et al.			

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	AJ16	JP 58-133004 A	08/1983	JP			No
	AK16	JP 60-58705 A	04/1985	JP			No
	AL16	JP 4-123614 A	04/1992	JP			No
	AM16	JP 4-127601 A	04/1992	JP			No

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AN	16	Lau, W.H. et al., "Analysis of the Time Variant Structure of Microwave Line-of-sight Multipath Phenomena," <i>IEEE Global Telecommunications Conference & Exhibition</i> , IEEE, pp. 1707-1711 (November 28 - December 1, 1988).
AO	16	Lau, W.H. et al., "Improved Prony Algorithm to Identify Multipath Components," <i>Electronics Letters</i> , IEE, Vol. 23, No. 20, pp. 1059-1060 (September 24, 1987).
AP	16	Lesage, P. and Audoin, C., "Effect of Dead-Time on the Estimation of the Two-Sample Variance," <i>IEEE Transactions on Instrumentation and Measurement</i> , IEEE Instrumentation and Measurement Society, Vol. IM-28, No. 1, pp. 6-10 (March 1979).
AQ	16	Liechti, C.A., "Performance of Dual-gate GaAs MESFET's as Gain-Controlled Low-Noise Amplifiers and High-Speed Modulators," <i>IEEE Transactions on Microwave Theory and Techniques</i> , IEEE Microwave Theory and Techniques Society, Vol. MTT-23, No. 6, pp. 461-469 (June 1975).
AR	16	Linnenbrink, T.E. et al., "A One Gigasample Per Second Transient Recorder," <i>IEEE Transactions on Nuclear Science</i> , IEEE Nuclear and Plasma Sciences Society, Vol. NS-26, No. 4, pp. 4443-4449 (August 1979).

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	AA17	4,955,079	09/1990	Connerney et al.			
	AB17	4,965,467	10/1990	Bilterijst			
	AC17	4,967,160	10/1990	Quivey et al.			
	AD17	4,970,703	11/1990	Hariharan et al.			
	AE17	4,982,353	01/1991	Jacob et al.			
	AF17	4,984,077	01/1991	Uchida			
	AG17	4,995,055	02/1991	Weinberger et al.			
	AH17	5,003,621	03/1991	Gailus			
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	AJ17	JP 5-175730 A	07/1993	JP			No
	AK17	JP 5-175734 A	07/1993	JP			No
	AL17	JP 7-154344 A	06/1995	JP			No
	AM17	JP 7-307620 A	11/1995	JP			No

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AN	17	Liou, M.L., "A Tutorial on Computer-Aided Analysis of Switched-Capacitor Circuits," <i>Proceedings of the IEEE</i> , IEEE, Vol. 71, No. 8, pp. 987-1005 (August 1983).
AO	17	Lo, P. et al., "Coherent Automatic Gain Control," <i>IEE Colloquium on Phase Locked Techniques</i> , IEE, pp. 2/1-2/6 (March 26, 1980).
AP	17	Lo, P. et al., "Computation of Rain Induced Scintillations on Satellite Down-Links at Microwave Frequencies," <i>Third International Conference on Antennas and Propagation (ICAP 83)</i> , pp. 127-131 (April 12-15, 1983).
AQ	17	Lo, P.S.L.O. et al., "Observations of Amplitude Scintillations on a Low-Elevation Earth-Space Path," <i>Electronics Letters</i> , IEE, Vol. 20, No. 7, pp. 307-308 (March 29, 1984).
AR	17	Madani, K. and Aithison, C.S., "A 20 Ghz Microwave Sampler," <i>IEEE Transactions on Microwave Theory and Techniques</i> , IEEE Microwave Theory and Techniques Society, Vol. 40, No. 10, pp. 1960-1963 (October 1992).

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	AA18	5,006,810	04/1991	Popescu			
	AB18	5,010,585	04/1991	Garcia			
	AC18	5,014,304	05/1991	Nicollini et al.			
	AD18	5,015,963	05/1991	Sutton			
	AE18	5,017,924	05/1991	Guiberteau et al.			RECEIVED DEC 15 2003
	AF18	5,020,149	05/1991	Hemmie			
	AG18	5,020,154	05/1991	Zierhut			Technology Center 2600
	AH18	5,052,050	09/1991	Collier et al.			
	AI18	5,065,409	11/1991	Hughes et al.			

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	AJ18	JP 55-66057 A	05/1980	JP			No
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	AL18	JP 63-153691 A	06/1988	JP			No
	AM18	EP 0 276 130 A2&A3	07/1988	EP			N/A

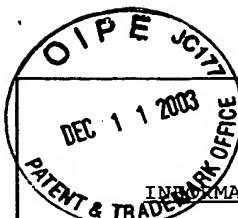
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AN	18	Marsland, R.A. et al., "130 Ghz GaAs monolithic integrated circuit sampling head," <i>Appl. Phys. Lett.</i> , American Institute of Physics, Vol. 55, No. 6, pp. 592-594 (August 7, 1989).
AO	18	Martin, K. and Sedra, A.S., "Switched-Capacitor Building Blocks for Adaptive Systems," <i>IEEE Transactions on Circuits and Systems</i> , IEEE Circuits and Systems Society, Vol. CAS-28, No. 6, pp. 576-584 (June 1981).
AP	18	Marzano, F.S. and d'Auria, G., "Model-based Prediction of Amplitude Scintillation variance due to Clear-Air Tropospheric Turbulence on Earth-Satellite Microwave Links," <i>IEEE Transactions on Antennas and Propagation</i> , IEEE Antennas and Propagation Society, Vol. 46, No. 10, pp. 1506-1518 (October 1998).
AQ	18	Matricciani, E., "Prediction of fade durations due to rain in satellite communication systems," <i>Radio Science</i> , American Geophysical Union, Vol. 32, No. 3, pp. 935-941 (May-June 1997).
AR	18	McQueen, J.G., "The Monitoring of High-Speed Waveforms," <i>Electronic Engineering</i> , Morgan Brothers Limited, Vol. XXIV, No. 296, pp. 436-441 (October 1952).

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	AA19	5,083,050	01/1992	Vasile			
	AB19	5,091,921	02/1992	Minami			
	AC19	5,095,533	03/1992	Loper et al.			
	AD19	5,095,536	03/1992	Loper			
	AE19	5,111,152	05/1992	Makino			DEC 15 2003
	AF19	5,113,094	05/1992	Grace et al.			
	AG19	5,113,129	05/1992	Hughes			
	AH19	5,122,765	06/1992	Pataut			
	AI19	5,124,592	06/1992	Hagino			

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	AJ19	WO 95/01006 A1	01/1995	PCT			N/A
	AK19	WO 97/08839 A2&A3	03/1997	PCT			N/A
	AL19	EP 0 254 844 A2	02/1988	EP			N/A
	AM19	EP 0 632 577 A1	01/1995	EP			N/A

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AN	19	Merkel, J. and Hall, R.D., "Broad-Band Thin-Film Signal Sampler," <i>IEEE Journal of Solid-State Circuits</i> , IEEE, Vol. SC-7, No. 1, pp. 50-54 (February 1972).
AO	19	Merlo, U. et al., "Amplitude Scintillation Cycles in a Sirio Satellite-Earth Link," <i>Electronics Letters</i> , IEE, Vol. 21, No. 23, pp. 1094-1096 (November 7, 1985).
AP	19	Morris, D., "Radio-holographic reflector measurement of the 30-m millimeter radio telescope at 22 Ghz with a cosmic signal source," <i>Astronomy and Astrophysics</i> , Springer-Verlag, Vol. 203, No. 2, pp. 399-406 (September (II) 1988).
AQ	19	Mousley, T.J. et al., "The efficient acquisition and processing of propagation statistics," <i>Journal of the Institution of Electronic and Radio Engineers</i> , IERE, Vol. 55, No. 3, pp. 97-103 (March 1985).
AR	19	Ndzi, D. et al., "Wide-Band Statistical Characterization of an Over-the-Sea Experimental Transhorizon Link," <i>IEE Colloquium on Radio Communications at Microwave and Millimetre Wave Frequencies</i> , IEE, pp. 1/1-1/6 (December 16, 1996).

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	AA20	5,136,267	08/1992	Cabot			
	AB20	5,140,705	08/1992	Kosuga			
	AC20	5,150,124	09/1992	Moore et al.			
	AD20	5,151,661	09/1992	Caldwell et al.			
	AE20	5,159,710	10/1992	Cusdin			RECEIVED DEC 15 2003
	AF20	5,170,414	12/1992	Silvian			
	AG20	5,172,070	12/1992	Hiraiwa et al.			Technology Center 2600
	AH20	5,191,459	03/1993	Thompson et al.			
	AI20	5,204,642	04/1993	Ashgar et al.			

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	AJ20	JP 60-130203 A	07/1985	JP			Yes (Doc. AO56)
	AK20	DE 196 27 640 A1	01/1997	DE			No
	AL20	EP 0 087 336 A1	08/1983	EP			No
	AM20	EP 0 087 336 B1	07/1986	EP			No

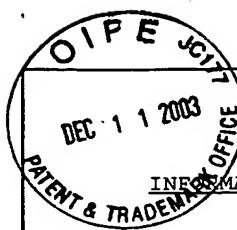
OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

AN	<u>20</u>	Ndzi, D. et al., "Wideband Statistics of Signal Levels and Doppler Spread on an Over-The-Sea Transhorizon Link," <i>IEE Colloquium on Propagation Characteristics and Related System Techniques for Beyond Line-of-Sight Radio</i> , IEE, pp. 9/1-9/6 (November 24, 1997).
AO	<u>20</u>	"New zero IF chipset from Philips," <i>Electronic Engineering</i> , United News & Media, Vol. 67, No. 825, p. 10 (September 1995).
AP	<u>20</u>	Ohara, H. et al., "First monolithic PCM filter cuts cost of telecomm systems," <i>Electronic Design</i> , Hayden Publishing Company, Vol. 27, No. 8, pp. 130-135 (April 12, 1979).
AQ	<u>20</u>	Oppenheim, A.V. et al., <i>Signals and Systems</i> , Prentice-Hall, pp. 527-531 and 561-562 (1983).
AR	<u>20</u>	Ortgies, G., "Experimental Parameters Affecting Amplitude Scintillation Measurements on Satellite Links," <i>Electronics Letters</i> , IEE, Vol. 21, No. 17, pp. 771-772 (August 15, 1985).

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	AA21	5,212,827	05/1993	Meszko et al.			
	AB21	5,214,787	05/1993	Karkota, Jr.			
	AC21	5,220,583	06/1993	Solomon			
	AD21	5,220,680	06/1993	Lee			
	AE21	5,222,144	06/1993	Whikehart			
	AF21	5,230,097	07/1993	Currie et al.			
	AG21	5,239,686	08/1993	Downey			
	AH21	5,241,561	08/1993	Barnard			
	AI21	5,249,203	09/1993	Loper			

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	AJ21	EP 0 789 449 A2 & A3	08/1997	EP			N/A
	AK21	FR 2 669 787 A1	05/1992	FR			No
	AL21	GB 2 324 919 A	11/1998	GB			N/A
	AM21	JP 61-30821 A	02/1986	JP			No

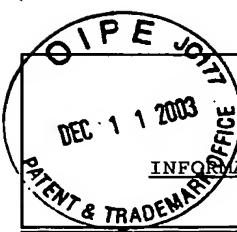
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AN	<u>21</u>	Pärssinen et al., "A 2-GHz Subharmonic Sampler for Signal Downconversion," <i>IEEE Transactions on Microwave Theory and Techniques</i> , IEEE, Vol. 45, No. 12, 7 pages (December 1997).
AO	<u>21</u>	Peeters, G. et al., "Evaluation of Statistical Models for Clear-Air Scintillation Prediction Using Olympus Satellite Measurements," <i>International Journal of Satellite Communications</i> , John Wiley and Sons, Vol. 15, No. 2, pp. 73-88 (March-April 1997).
AP	<u>21</u>	Perrey, A.G. and Schoenwetter, H.K., <i>NBS Technical Note 1121: A Schottky Diode Bridge Sampling Gate</i> , U.S. Dept. of Commerce, pp. 1-14 (May 1980).
AQ	<u>21</u>	Poulton, K. et al., "A 1-Ghz 6-bit ADC System," <i>IEEE Journal of Solid-State Circuits</i> , IEEE, Vol. SC-22, No. 6, pp. 962-969 (December 1987).
AR	<u>21</u>	Press Release, "Parkervision, Inc. Announces Fiscal 1993 Results," Lippert/Heilshorn and Associates, 2 Pages (April 6, 1994).

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	AA22	5,251,218	10/1993	Stone et al.			
	AB22	5,251,232	10/1993	Nonami			
	AC22	5,260,970	11/1993	Henry et al.			
	AD22	5,263,194	11/1993	Ragan			
	AE22	5,263,196	11/1993	Jasper			DEC 15 2003
	AF22	5,267,023	11/1993	Kawasaki			
	AG22	5,278,826	01/1994	Murphy et al.			Technology Center 2000
	AH22	5,282,023	01/1994	Scarpa			
	AI22	5,287,516	02/1994	Schaub			

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	AJ22	JP 5-327356 A	12/1993	JP			No
	AK22	EP 0 643 477 A2&A3	03/1995	EP			N/A
	AL22	EP 0 877 476 A1	11/1998	EP			N/A
	AM22	EP 0 977 351 A1	02/2000	EP			N/A

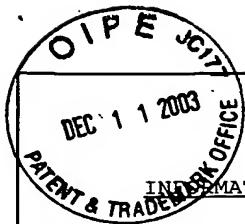
OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	<u>22</u>	Press Release, "Parkervision, Inc. Announces the Appointment of Michael Baker to the New Position of National Sales Manager," Lippert/Heilshorn and Associates, 1 Page (April 7, 1994).
	AO	<u>22</u>	Press Release, "Parkervision's Cameraman Well-Received By Distance Learning Market," Lippert/Heilshorn and Associates, 2 Pages (April 8, 1994).
	AP	<u>22</u>	Press Release, "Parkervision, Inc. Announces First Quarter Financial Results," Lippert/Heilshorn and Associates, 2 Pages (April 26, 1994).
	AQ	<u>22</u>	Press Release, "Parkervision, Inc. Announces The Retirement of William H. Fletcher, Chief Financial Officer," Lippert/Heilshorn and Associates, 1 Page (May 11, 1994).
	AR	<u>22</u>	Press Release, "Parkervision, Inc. Announces New Cameraman System II™ At Infocomm Trade Show," Lippert/Heilshorn and Associates, 3 Pages (June 9, 1994).

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	AA23	5,293,398	03/1994	Hamao et al.			
	AB23	5,303,417	04/1994	Laws			
	AC23	5,307,517	04/1994	Rich			
	AD23	5,315,583	05/1994	Murphy et al.			
	AE23	5,321,852	06/1994	Seong			
	AF23	5,325,204	06/1994	Scarpa			
	AG23	5,337,014	08/1994	Najle et al.			
	AH23	5,339,054	08/1994	Taguchi			
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	AJ23	WO 00/31659 A1	06/2000	PCT			N/A
	AK23	JP 9-36664 A	02/1997	JP			No
	AL						Yes No
	AM						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

AN	<u>23</u>	Press Release, "Parkervision, Inc. Announces Appointments to its National Sales Force," Lippert/Heilshorn and Associates, 2 Pages (June 17, 1994).
AO	<u>23</u>	Press Release, "Parkervision, Inc. Announces Second Quarter and Six Months Financial Results," Lippert/Heilshorn and Associates, 3 Pages (August 9, 1994).
AP	<u>23</u>	Press Release, "Parkervision, Inc. Announces Third Quarter and Nine Months Financial Results," Lippert/Heilshorn and Associates, 3 Pages (October 28, 1994).
AQ	<u>23</u>	Press Release, "Parkervision, Inc. Announces First Significant Dealer Sale of Its Cameraman® System II," Lippert/Heilshorn and Associates, 2 Pages (November 7, 1994).
AR	<u>23</u>	Press Release, "Parkervision, Inc. Announces Fourth Quarter and Year End Results," Lippert/Heilshorn and Associates, 2 Pages (March 1, 1995).

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	AA24	5,355,114	10/1994	Sutterlin et al.			
	AB24	5,361,408	11/1994	Watanabe et al.			
	AC24	5,369,800	11/1994	Takagi et al.			
	AD24	5,375,146	12/1994	Chalmers			
	AE24	5,379,040	01/1995	Mizomoto et al.			DEC 15 2003
	AF24	5,379,141	01/1995	Thompson et al.			
	AG24	5,388,063	02/1995	Takatori et al.			Technology Center 2600
	AH24	5,390,364	02/1995	Webster et al.			
	AI24	5,400,084	03/1995	Scarpa			

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	AJ						Yes No
	AK						Yes No
	AL						Yes No
	AM						Yes No

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	AN	<u>24</u>	Press Release, "Parkervision, Inc. Announces Joint Product Developments With VTEL," Lippert/Heilshorn and Associates, 2 Pages (March 21, 1995).
	AO	<u>24</u>	Press Release, "Parkervision, Inc. Announces First Quarter Financial Results," Lippert/Heilshorn and Associates, 3 Pages (April 28, 1995).
	AP	<u>24</u>	Press Release, "Parkervision Wins Top 100 Product Districts' Choice Award," Parkervision Marketing and Manufacturing Headquarters, 1 Page (June 29, 1995).
	AQ	<u>24</u>	Press Release, "Parkervision National Sales Manager Next President of USDLA," Parkervision Marketing and Manufacturing Headquarters, 1 Page (July 6, 1995).
	AR	<u>24</u>	Press Release, "Parkervision Granted New Patent," Parkervision Marketing and Manufacturing Headquarters, 1 Page (July 21, 1995).

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	AA25	5,404,127	04/1995	Lee et al.			
	AB25	5,410,541	04/1995	Hotto			
	AC25	5,410,743	04/1995	Seely et al.			
	AD25	5,412,352	05/1995	Graham			
	AE25	5,416,803	05/1995	Janer			DEC 15 2003
	AF25	5,422,913	06/1995	Wilkinson			Technology Center 2600
	AG25	5,423,082	06/1995	Cygan et al.			
	AH25	5,428,638	06/1995	Cioffi et al.			
	AI25	5,428,640	06/1995	Townley			

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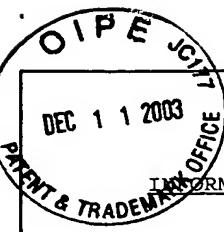
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AN	<u>25</u>	Press Release, "Parkervision, Inc. Announces Second Quarter and Six Months Financial Results," Parkervision Marketing and Manufacturing Headquarters, 2 Pages (July 31, 1995).
AO	<u>25</u>	Press Release, "Parkervision, Inc. Expands Its Cameraman System II Product Line," Parkervision Marketing and Manufacturing Headquarters, 2 Pages (September 22, 1995).
AP	<u>25</u>	Press Release, "Parkervision Announces New Camera Control Technology," Parkervision Marketing and Manufacturing Headquarters, 2 Pages (October 25, 1995).
AQ	<u>25</u>	Press Release, "Parkervision, Inc. Announces Completion of VTEL/Parkervision Joint Product Line," Parkervision Marketing and Manufacturing Headquarters, 2 Pages (October 30, 1995).
AR	<u>25</u>	Press Release, "Parkervision, Inc. Announces Third Quarter and Nine Months Financial Results," Parkervision Marketing and Manufacturing Headquarters, 2 Pages (October 30, 1995).

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	AA26	5,434,546	07/1995	Palmer			
	AB26	5,438,692	08/1995	Mohindra			RECEIVED
	AC26	5,444,415	08/1995	Dent et al.			DEC 15 2003
	AD26	5,444,416	08/1995	Ishikawa et al.			
	AE26	5,444,865	08/1995	Heck et al.			
	AF26	5,446,421	08/1995	Kechkaylo			Technology Center 2600
	AG26	5,446,422	08/1995	Mattila et al.			
	AH26	5,448,602	09/1995	Ohmori et al.			
	AI26	5,451,899	09/1995	Lawton			

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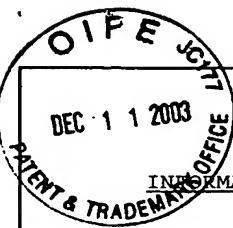
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	AN	26	Press Release, "Parkervision's Cameraman Personal Locator Camera System Wins Telecon XV Award," Parkervision Marketing and Manufacturing Headquarters, 2 Pages (November 1, 1995).
	AO	26	Press Release, "Parkervision, Inc. Announces Purchase Commitment From VTEL Corporation," Parkervision Marketing and Manufacturing Headquarters, 1 Page (February 26, 1996).
	AP	26	Press Release, "ParkerVision, Inc. Announces Fourth Quarter and Year End Results," Parkervision Marketing and Manufacturing Headquarters, 2 Pages (February 27, 1996).
	AQ	26	Press Release, "ParkerVision, Inc. Expands its Product Line," Parkervision Marketing and Manufacturing Headquarters, 2 Pages (March 7, 1996).
	AR	26	Press Release, "ParkerVision Files Patents for its Research of Wireless Technology," Parkervision Marketing and Manufacturing Headquarters, 1 Page (March 28, 1996).

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	AA27	5,454,007	09/1995	Dutta			
	AB27	5,454,009	09/1995	Fruit et al.			
	AC27	5,463,356	10/1995	Palmer			
	AD27	5,463,357	10/1995	Hobden			
	AE27	5,465,071	11/1995	Kobayashi et al.			DEC 15 2003
	AF27	5,465,410	11/1995	Hiben et al.			
	AG27	5,465,415	11/1995	Bien			Technology Center 2600
	AH27	5,471,162	11/1995	McEwan			
	AI27	5,479,120	12/1995	McEwan			

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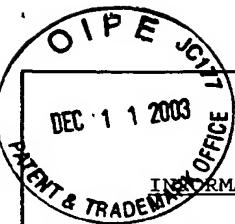
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	AN	27	Press Release, "Parkervision, Inc. Announces First Significant Sale of Its Cameraman® Three-Chip System," Parkervision Marketing and Manufacturing Headquarters, 2 pages (April 12, 1996).
	AO	27	Press Release, "Parkervision, Inc. Introduces New Product Line For Studio Production Market," Parkervision Marketing and Manufacturing Headquarters, 2 Pages (April 15, 1996).
	AP	27	Press Release, "Parkervision, Inc. Announces Private Placement of 800,000 Shares," Parkervision Marketing and Manufacturing Headquarters, 1 Page (April 15, 1996).
	AQ	27	Press Release, "Parkervision, Inc. Announces First Quarter Financial Results," Parkervision Marketing and Manufacturing Headquarters, 3 Pages (April 30, 1996).
	AR	27	Press Release, "ParkerVision's New Studio Product Wins Award," Parkervision Marketing and Manufacturing Headquarters, 2 Pages (June 5, 1996).

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	AA28	5,479,447	12/1995	Chow et al.			
	AB28	5,483,193	01/1996	Kennedy et al.			
	AC28	5,483,549	01/1996	Weinberg et al.			
	AD28	5,483,691	01/1996	Heck et al.			
	AE28	5,490,173	02/1996	Whikehart et al.			
	AF28	5,493,581	02/1996	Young et al.			DEC 15 2003
	AG28	5,493,721	02/1996	Reis			
	AH28	5,495,200	02/1996	Kwan et al.			
	AI28	5,495,202	02/1996	Hsu			

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FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ						Yes No
	AK						Yes No
	AL						Yes No
	AM						Yes No

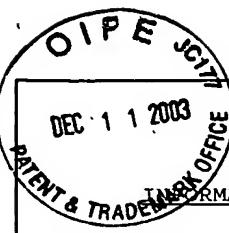
OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	28	Press Release, "Parkervision, Inc. Announces Second Quarter and Six Months Financial Results," Parkervision Marketing and Manufacturing Headquarters, 3 Pages (August 1, 1996).
	AO	28	Press Release, "Parkervision, Inc. Announces Third Quarter and Nine Months Financial Results," Parkervision Marketing and Manufacturing Headquarters, 2 Pages (October 29, 1996).
	AP	28	Press Release, "PictureTel and ParkerVision Sign Reseller Agreement," Parkervision Marketing and Manufacturing Headquarters, 2 Pages (October 30, 1996).
	AQ	28	Press Release, "CLI and ParkerVision Bring Enhanced Ease-of-Use to Videoconferencing," CLI/Parkervision, 2 Pages (January 20, 1997).
	AR	28	Press Release, "Parkervision, Inc. Announces Fourth Quarter and Year End Results," Parkervision Marketing and Manufacturing Headquarters, 3 Pages (February 27, 1997).

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EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

ATTY. DOCKET NO.
1744.0020007APPLICATION NO.
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U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA29	5,495,500	02/1996	Jovanovich et al.			
	AB29	5,499,267	03/1996	Ohe et al.			
	AC29	5,500,758	03/1996	Thompson et al.			
	AD29	5,517,688	05/1996	Fajen et al.			
	AE29	5,519,890	05/1996	Pinckley			RECEIVED
	AF29	5,523,719	06/1996	Longo et al.			DEC 15 2003
	AG29	5,523,726	06/1996	Kroeger et al.			Technology Center 2600
	AH29	5,523,760	06/1996	McEwan			
	AI29	5,539,770	07/1996	Ishigaki			

FOREIGN PATENT DOCUMENTS

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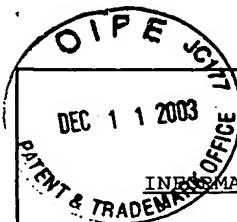
OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	29	Press Release, "Parkervision, Inc. Announces First Quarter Financial Results," Parkervision Marketing and Manufacturing Headquarters, 3 Pages (April 29, 1997).
	AO	29	Press Release, "NEC and Parkervision Make Distance Learning Closer," NEC America, 2 Pages (June 18, 1997).
	AP	29	Press Release, "Parkervision Supplies JPL with Robotic Cameras, Cameraman Shot Director for Mars Mission," Parkervision Marketing and Manufacturing Headquarters, 2 pages (July 8, 1997).
	AQ	29	Press Release, "ParkerVision and IBM Join Forces to Create Wireless Computer Peripherals," Parkervision Marketing and Manufacturing Headquarters, 2 Pages (July 23, 1997).
	AR	29	Press Release, "ParkerVision, Inc. Announces Second Quarter and Six Months Financial Results," Parkervision Marketing and Manufacturing Headquarters, 3 Pages (July 31, 1997).

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U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA30	5,555,453	09/1996	Kajimoto et al.			
	AB30	5,557,641	09/1996	Weinberg			
	AC30	5,557,642	09/1996	Williams			
	AD30	5,579,341	11/1996	Smith et al.			
	AE30	5,579,347	11/1996	Lindquist et al.			
	AF30	5,584,068	12/1996	Mohindra			RECEIVED DEC 15 2003
	AG30	5,592,131	01/1997	Labreche et al.			Technology Center 2600
	AH30	5,602,847	02/1997	Pagano et al.			
	AI30	5,602,868	02/1997	Wilson			

FOREIGN PATENT DOCUMENTS

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	AM						Yes No

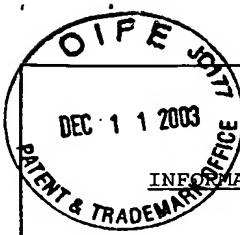
OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

AN	30	Press Release, "Parkervision, Inc. Announces Private Placement of 990,000 Shares," Parkervision Marketing and Manufacturing Headquarters, 2 Pages (September 8, 1997).
AO	30	Press Release, "Wal-Mart Chooses Parkervision for Broadcast Production," Parkervision Marketing and Manufacturing Headquarters, 2 Pages (October 24, 1997).
AP	30	Press Release, "Parkervision, Inc. Announces Third Quarter Financial Results," Parkervision Marketing and Manufacturing Headquarters, 3 Pages (October 30, 1997).
AQ	30	Press Release, "ParkerVision Announces Breakthrough in Wireless Radio Frequency Technology," Parkervision Marketing and Manufacturing Headquarters, 3 Pages (December 10, 1997).
AR	30	Press Release, "Parkervision, Inc. Announces the Appointment of Joseph F. Skovron to the Position of Vice President, Licensing - Wireless Technologies," Parkervision Marketing and Manufacturing Headquarters, 2 Pages (January 9, 1998).

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA31	5,604,732	02/1997	Kim et al.			
	AB31	5,608,531	03/1997	Honda et al.			
	AC31	5,610,946	03/1997	Tanaka et al.			
	AD31	RE 35,494	04/1997	Nicollini			
	AE31	5,617,451	04/1997	Mimura et al.			RECEIVED
	AF31	5,619,538	04/1997	Sempel et al.			DEC 15 2003
	AG31	5,621,455	04/1997	Rogers et al.			Technology Center 2600
	AH31	5,630,227	05/1997	Bella et al.			
	AI31	5,640,415	06/1997	Pandula			

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ						Yes No
	AK						Yes No
	AL						Yes No
	AM						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

AN	<u>31</u>	Press Release, "Parkervision Announces Existing Agreement with IBM Terminates-- Company Continues with Strategic Focus Announced in December," Parkervision Marketing and Manufacturing Headquarters, 2 Pages (January 27, 1998).
AO	<u>31</u>	Press Release, "Laboratory Tests Verify Parkervision Wireless Technology," Parkervision Marketing and Manufacturing Headquarters, 2 Pages (March 3, 1998).
AP	<u>31</u>	Press Release, "Parkervision, Inc. Announces Fourth Quarter and Year End Financial Results," Parkervision Marketing and Manufacturing Headquarters, 3 Pages (March 5, 1998).
AQ	<u>31</u>	Press Release, "Parkervision Awarded Editors' Pick of Show for NAB 98," Parkervision Marketing and Manufacturing Headquarters, 2 Pages (April 15, 1998).
AR	<u>31</u>	Press Release, "Parkervision Announces First Quarter Financial Results," Parkervision Marketing and Manufacturing Headquarters, 3 Pages (May 4, 1998).

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA32	5,640,424	06/1997	Banavong et al.			
	AB32	5,640,428	06/1997	Abe et al.			
	AC32	5,640,698	06/1997	Shen et al.			
	AD32	5,648,985	07/1997	Bjerede et al.			
	AE32	5,650,785	07/1997	Rodal			
	AF32	5,661,424	08/1997	Tang			DEC 15 2003
	AG32	5,663,878	09/1997	Walker			
	AH32	5,663,986	09/1997	Striffler			Technology Center 2600
	AI32	5,668,836	09/1997	Smith et al.			

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	AK						Yes No
	AL						Yes No
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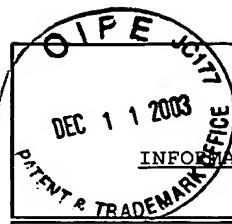
OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

AN	<u>32</u>	Press Release, "Parkervision 'DIRECT2DATA' Introduced in Response to Market Demand," Parkervision Marketing and Manufacturing Headquarters, 3 Pages (July 9, 1998).
AO	<u>32</u>	Press Release, "Parkervision Expands Senior Management Team," Parkervision Marketing and Manufacturing Headquarters, 2 Pages (July 29, 1998).
AP	<u>32</u>	Press Release, "Parkervision Announces Second Quarter and Six Month Financial Results," Parkervision Marketing and Manufacturing Headquarters, 4 Pages (July 30, 1998).
AQ	<u>32</u>	Press Release, "Parkervision Announces Third Quarter and Nine Month Financial Results," Parkervision Marketing and Manufacturing Headquarters, 3 Pages (October 30, 1998).
AR	<u>32</u>	Press Release, "Questar Infocomm, Inc. Invests \$5 Million in Parkervision Common Stock," Parkervision Marketing and Manufacturing Headquarters, 3 Pages (December 2, 1998).

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U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA33	5,680,078	10/1997	Ariie			
	AB33	5,680,418	10/1997	Croft et al.			
	AC33	5,689,413	11/1997	Jaramillo et al.			
	AD33	5,699,006	12/1997	Zele et al.			
	AE33	5,705,955	01/1998	Freeburg et al.			
	AF33	5,710,998	01/1998	Opas			DEC 15 2003
	AG33	5,714,910	02/1998	Skoczen et al.			
	AH33	5,715,281	02/1998	Bly et al.			Technology Center 2600
	AI33	5,721,514	02/1998	Crockett et al.			

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	AM						Yes No

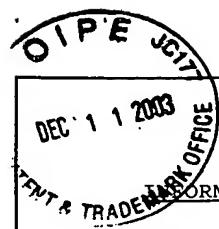
OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	<u>33</u>	Press Release, "Parkervision Adds Two New Directors," Parkervision Marketing and Manufacturing Headquarters, 2 Pages (March 5, 1999).
	AO	<u>33</u>	Press Release, "Parkervision Announces Fourth Quarter and Year End Financial Results," Parkervision Marketing and Manufacturing Headquarters, 3 Pages (March 5, 1999).
	AP	<u>33</u>	Press Release, "Joint Marketing Agreement Offers New Automated Production Solution," Parkervision Marketing and Manufacturing Headquarters, 2 Pages (April 13, 1999).
	AQ	<u>33</u>	"Project COST 205: Scintillations in Earth-satellite links," <i>Alta Frequenza: Scientific Review in Electronics</i> , AEI, Vol. LIV, No. 3, pp. 209-211 (May-June, 1985).
	AR	<u>33</u>	Razavi, B., <i>RF Microelectronics</i> , Prentice-Hall, pp. 147-149 (1998).

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2682**U.S. PATENT DOCUMENTS**

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA34	5,724,002	03/1998	Hulick			
	AB34	5,724,653	03/1998	Baker et al.			
	AC34	5,729,577	03/1998	Chen			
	AD34	5,729,829	03/1998	Talwar et al.			
	AE34	5,732,333	03/1998	Cox et al.			
	AF34	5,736,895	04/1998	Yu et al.			
	AG34	5,737,035	04/1998	Rotzoll			
	AH34	5,742,189	04/1998	Yoshida et al.			
	AI34	5,748,683	05/1998	Smith et al.			

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FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ						Yes No
	AK						Yes No
	AL						Yes No
	AM						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

AN	34	Reeves, R.J.D., "The Recording and Collocation of Waveforms (Part 1)," <i>Electronic Engineering</i> , Morgan Brothers Limited, Vol. 31, No. 373, pp. 130-137 (March 1959).
AO	34	Reeves, R.J.D., "The Recording and Collocation of Waveforms (Part 2)," <i>Electronic Engineering</i> , Morgan Brothers Limited, Vol. 31, No. 374, pp. 204-212 (April 1959).
AP	34	Rein, H.M. and Zahn, M., "Subnanosecond-Pulse Generator with Variable Pulsewidth Using Avalanche Transistors," <i>Electronics Letters</i> , IEE, Vol. 11, No. 1, pp. 21-23 (January 9, 1975).
AQ	34	Riad, S.M. and Nahman, N.S., "Modeling of the Feed-through Wideband (DC to 12.4 Ghz) Sampling-Head," <i>IEEE MTT-S International Microwave Symposium Digest</i> , IEEE, pp. 267-269 (June 27-29, 1978).
AR	34	Rizzoli, V. et al., "Computer-Aided Noise Analysis of MESFET and HEMT Mixers," <i>IEEE Transactions on Microwave Theory and Techniques</i> , IEEE, Vol. 37, No. 9, pp. 1401-1410 (September 1989).

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U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA35	RE 35,829	06/1998	Sanderford, Jr.			
	AB35	5,760,645	06/1998	Comte et al.			
	AC35	5,764,087	06/1998	Clark			
	AD35	5,767,726	06/1998	Wang			
	AE35	5,768,118	06/1998	Faulk et al.			
	AF35	5,771,442	06/1998	Wang et al.			DEC 15 2003
	AG35	5,777,692	07/1998	Ghosh			
	AH35	5,777,771	07/1998	Smith			
	AI35	5,786,844	07/1998	Rogers et al.			

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FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ						Yes No
	AK						Yes No
	AL						Yes No
	AM						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	35	Rowe, H.E., <i>Signals and Noise in Communication Systems</i> , D. Van Nostrand Company, Inc., Princeton, New Jersey, including, for example, Chapter V, Pulse Modulation Systems (1965).
	AO	35	Rücker, F. and Dintelmann, F., "Effect of Antenna Size on OTS Signal Scintillations and Their Seasonal Dependence," <i>Electronics Letters</i> , IEE, Vol. 19, No. 24, pp. 1032-1034 (November 24, 1983).
	AP	35	Russell, R. and Hoare, L., "Millimeter Wave Phase Locked Oscillators," <i>Military Microwaves '78 Conference Proceedings</i> , Microwave Exhibitions and Publishers, pp. 238-242 (October 25-27, 1978).
	AQ	35	Sabel, L.P., "A DSP Implementation of a Robust Flexible Receiver/Demultiplexer for Broadcast Data Satellite Communications," <i>The Institution of Engineers Australia Communications Conference</i> , Institution of Engineers, Australia, pp. 218-223 (October 16-18, 1990).
	AR	35	Salous, S., "IF digital generation of FMCW waveforms for wideband channel characterization," <i>IEE Proceedings-I</i> , IEE, Vol. 139, No. 3, pp. 281-288 (June 1992).

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			APPLICANTS Sorrells et al.	
			FILING DATE March 4, 2002	GROUP 2682

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA36	5,793,801	08/1998	Fertner			
	AB36	5,793,818	08/1998	Claydon et al.			
	AC36	5,802,463	09/1998	Zuckerman			
	AD36	5,809,060	09/1998	Cafarella et al.			
	AE36	5,818,582	10/1998	Fernandez et al.			
	AF36	5,825,254	10/1998	Lee			DEC 15 2003
	AG36	5,834,985	11/1998	Sundegård			
	AH36	5,864,754	01/1999	Hotto			Technology Center 2000
	AI36	5,881,375	03/1999	Bonds			

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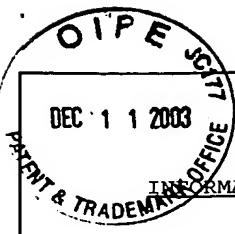
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	AJ						Yes No
	AK						Yes No
	AL						Yes No
	AM						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

AN	36	"Sampling Loops Lock Sources to 23 Ghz," <i>Microwaves & RF</i> , Penton Publishing, p. 212 (September 1990).
AO	36	Sasikumar, M. et al., "Active Compensation in the Switched-Capacitor Biquad," <i>Proceedings of the IEEE</i> , IEEE, Vol. 71, No. 8, pp. 1008-1009 (August 1983).
AP	36	Saul, P.H., "A GaAs MESFET Sample and Hold Switch," <i>Fifth European Solid State Circuits Conference-ESSCIRC 79</i> , IEE, pp. 5-7 (1979).
AQ	36	Shen, D.H. et al., "A 900-MHZ RF Front-End with Integrated Discrete-Time Filtering," <i>IEEE Journal of Solid-State Circuits</i> , IEEE Solid-State Circuits Council, Vol. 31, No. 12, pp. 1945-1954 (December 1996).
AR	36	Shen, X.D. and Vilar, E., "Anomalous transhorizon propagation and meteorological processes of a multilink path," <i>Radio Science</i> , American Geophysical Union, Vol. 30, No. 5, pp. 1467-1479 (September-October 1995).

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA37	5,892,380	04/1999	Quist			
	AB37	5,894,239	04/1999	Bonaccio et al.			
	AC37	5,896,562	04/1999	Heinonen			
	AD37	5,900,747	05/1999	Brauns			
	AE37	5,901,054	05/1999	Leu et al.			
	AF37	5,901,187	05/1999	Iinuma			DEC 15 2003
	AG37	5,901,344	05/1999	Opas			
	AH37	5,901,347	05/1999	Chambers et al.			
	AI37	5,901,348	05/1999	Bang et al.			

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FOREIGN PATENT DOCUMENTS

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	AJ						Yes No
	AK						Yes No
	AL						Yes No
	AM						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

AN	37	Shen, X. and Tawfik, A.N., "Dynamic Behaviour of Radio Channels Due to Trans-Horizon Propagation Mechanisms," <i>Electronics Letters</i> , IEE, Vol. 29, No. 17, pp. 1582-1583 (August 19, 1993).
AO	37	Shen, X. et al., "Modeling Enhanced Spherical Diffraction and Troposcattering on a Transhorizon Path with aid of the parabolic Equation and Ray-Tracing Methods," <i>IEE Colloquium on Common modeling techniques for electromagnetic wave and acoustic wave propagation</i> , IEE, pp. 4/1-4/7 (March 8, 1996).
AP	37	Shen, X. and Vilar, E., "Path loss statistics and mechanisms of transhorizon propagation over a sea path," <i>Electronics Letters</i> , IEE, Vol. 32, No. 3, pp. 259-261 (February 1, 1996).
AQ	37	Shen, D. et al., "A 900 MHZ Integrated Discrete-Time Filtering RF Front-End," <i>IEEE International Solid State Circuits Conference</i> , IEEE, Vol. 39, pp. 54-55 and 417 (February 1996).
AR	37	Spillard, C. et al., "X-Band Tropospheric Transhorizon Propagation Under Differing Meteorological Conditions," <i>Sixth International Conference on Antennas and Propagation (ICAP 89) Part 2: Propagation</i> , IEE, pp. 451-455 (April 4-7, 1989).

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA38	5,901,349	05/1999	Guegnaud et al.			
	AB38	5,903,178	05/1999	Miyatsuji et al.			
	AC38	5,903,187	05/1999	Claverie et al.			
	AD38	5,903,196	05/1999	Salvi et al.			
	AE38	5,903,421	05/1999	Furutani et al.			DEC 15 2003
	AF38	5,903,553	05/1999	Sakamoto et al.			
	AG38	5,903,595	05/1999	Suzuki			Technology Center 2600
	AH38	5,903,609	05/1999	Kool et al.			
	AI38	5,903,827	05/1999	Kennan et al.			

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	AK						Yes No
	AL						Yes No
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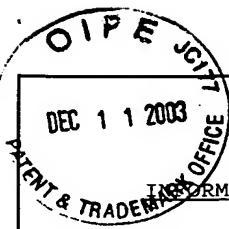
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AN	<u>38</u>	Stafford, K.R. et al., "A Complete Monolithic Sample/Hold Amplifier," <i>IEEE Journal of Solid-State Circuits</i> , IEEE, Vol. SC-9, No. 6, pp. 381-387 (December 1974).
AO	<u>38</u>	Staruk, W. Jr. et al., "Pushing HF Data Rates," <i>Defense Electronics, EW Communications</i> , Vol. 17, No. 5, pp. 211, 213, 215, 217, 220 and 222 (May 1985).
AP	<u>38</u>	Stephenson, A.G., "Digitizing multiple RF signals requires an optimum sampling rate," <i>Electronics</i> , McGraw-Hill, pp. 106-110 (March 27, 1972).
AQ	<u>38</u>	Sugarman, R., "Sampling Oscilloscope for Statistically Varying Pulses," <i>The Review of Scientific Instruments</i> , American Institute of Physics, Vol. 28, No. 11, pp. 933-938 (November 1957).
AR	<u>38</u>	Sylvain, M., "Experimental probing of multipath microwave channels," <i>Radio Science</i> , American Geophysical Union, Vol. 24, No. 2, pp. 160-178 (March-April 1989).

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1744.0020007APPLICATION NO.
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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA39	5,903,854	05/1999	Abe et al.			
	AB39	5,905,449	05/1999	Tsubouchi et al.			
	AC39	5,907,149	05/1999	Marckini			
	AD39	5,907,197	05/1999	Faulk			
	AE39	5,911,116	06/1999	Nossowitz			
	AF39	5,911,123	06/1999	Shaffer et al.			
	AG39	5,914,622	06/1999	Inoue			
	AH39	5,920,199	07/1999	Sauer			
	AI39	5,943,370	08/1999	Smith			

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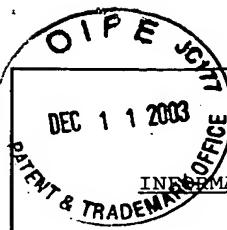
OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	39	Takano, T., "NOVEL GaAs Pet Phase Detector Operable To Ka Band," <i>IEEE MT-S Digest</i> , IEEE, pp. 381-383 (1984).
	AO	39	Tan, M.A., "Biquadratic Transconductance Switched-Capacitor Filters," <i>IEEE Transactions on Circuits and Systems- I: Fundamental Theory and Applications</i> , IEEE Circuits and Systems Society, Vol. 40, No. 4, pp. 272-275 (April 1993).
	AP	39	Tanaka, K. et al., "Single Chip Multisystem AM Stereo Decoder IC," <i>IEEE Transactions on Consumer Electronics</i> , IEEE Consumer Electronics Society, Vol. CE-32, No. 3, pp. 482-496 (August 1986).
	AQ	39	Tawfik, A.N., "Amplitude, Duration and Predictability of Long Hop Trans-Horizon X-band Signals Over the Sea," <i>Electronics Letters</i> , IEE, Vol. 28, No. 6, pp. 571-572 (March 12, 1992).
	AR	39	Tawfik, A.N. and Vilar, E., "Correlation of Transhorizon Signal Level Strength with Localized Surface Meteorological Parameters," <i>Eighth International Conference on Antennas and Propagation</i> , Electronics Division of the IEE, pp. 335-339 (March 30- April 2, 1993).

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA40	4,017,798	04/1977	Gordy et al.			
	AB40	4,032,847	06/1977	Unkauf			
	AC40	4,253,067	02/1981	Caples et al.			
	AD40	4,393,395	07/1983	Hacke et al.			
	AE40	4,816,704	03/1989	Fiori, Jr.			
	AF40	4,841,265	06/1989	Watanabe et al.			
	AG40	4,943,974	07/1990	Motamedi			
	AH40	5,115,409	05/1992	Stepp			
	AI40	5,353,306	10/1994	Yamamoto			

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	AK						Yes No
	AL						Yes No
	AM						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

AN	40	Tawfik, A.N. and Vilar, E., "Dynamic Structure of a Transhorizon Signal at X-band Over a Sea Path," <i>Sixth International Conference on Antennas and Propagation (ICAP 89) Part 2: Propagation</i> , IEE, pp. 446-450 (April 4-7, 1989).
AO	40	Tawfik, A.N. and Vilar, E., "Statistics of Duration and Intensity of Path Loss in a Microwave Transhorizon Sea-Path," <i>Electronics Letters</i> , IEE, Vol. 26, No. 7, pp. 474-476 (March 29, 1990).
AP	40	Tawfik, A.N. and Vilar, E., "X-Band Transhorizon Measurements of CW Transmissions Over the Sea- Part 1: Path Loss, Duration of Events, and Their Modeling," <i>IEEE Transactions on Antennas and Propagation</i> , IEEE Antennas and Propagation Society, Vol. 41, No. 11, pp. 1491-1500 (November 1993).
AQ	40	Temes, G.C. and Tsividis, T., "The Special Section on Switched-Capacitor Circuits," <i>Proceedings of the IEEE</i> , IEEE, Vol. 71, No. 8, pp. 915-916 (August 1983).
AR	40	Thomas, G.B., <i>Calculus and Analytic Geometry</i> , Third Edition, Addison-Wesley Publishing, pp. 119-133 (1960).

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA41	5,515,014	05/1996	Troutman			
	AB41	5,563,550	10/1996	Toth			
	AC41	5,574,755	11/1996	Persico			
	AD41	5,604,592	02/1997	Kotidis et al.			
	AE41	5,638,396	06/1997	Klimek			
	AF41	5,675,392	10/1997	Nayebi et al.			
	AG41	5,694,096	12/1997	Ushiroku et al.			
	AH41	5,757,870	05/1998	Miya et al.			
	AI41	5,768,323	06/1998	Kroeger et al.			

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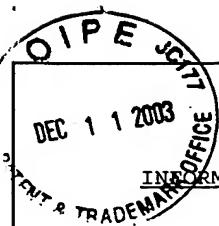
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	AK						Yes No
	AL						Yes No
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OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

AN	41	Tomassetti, Q., "An Unusual Microwave Mixer," <i>16th European Microwave Conference</i> , Microwave Exhibitions and Publishers, pp. 754-759 (September 8-12, 1986).
AO	41	Tortoli, P. et al., "Bidirectional Doppler Signal Analysis Based on a Single RF Sampling Channel," <i>IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control</i> , IEEE Ultrasonics, Ferroelectrics, and Frequency Control Society, Vol. 41, No. 1, pp. 1-3 (January 1984).
AP	41	Tsividis, Y. and Antognetti, P. (Ed.), <i>Design of MOS VLSI Circuits for Telecommunications</i> , Prentice-Hall, p. 304 (1985).
AQ	41	Tsividis, Y., "Principles of Operation and Analysis of Switched-Capacitor Circuits," <i>Proceedings of the IEEE</i> , IEEE, Vol. 71, No. 8, pp. 926-940 (August 1983).
AR	41	Tsurumi, H. and Maeda, T., "Design Study on a Direct Conversion Receiver Front-End for 280 MHZ, 900 MHZ, and 2.6 Ghz Band Radio Communication Systems," <i>41st IEEE Vehicular Technology Conference</i> , IEEE Vehicular Technology Society, pp. 457-462 (May 19-22, 1991).

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	AA42	5,770,985	06/1998	Ushiroku et al.			
	AB42	5,778,022	07/1998	Walley			
	AC42	5,812,546	09/1998	Zhou et al.			
	AD42	5,818,869	10/1998	Miya et al.			
	AE42	5,844,449	12/1998	Abeno et al.			
	AF42	5,872,446	02/1999	Cranford, Jr. et al.			RECEIVED DEC 15 2003
	AG42	5,909,447	06/1999	Cox et al.			
	AH42	5,933,467	08/1999	Sehier et al.			
	AI42	5,952,895	09/1999	McCune, Jr. et al.			

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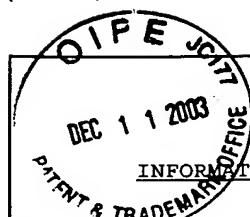
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OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	42	Valdmanis, J.A. et al., "Picosecond and Subpicosecond Optoelectronics for Measurements of Future High Speed Electronic Devices," <i>IEDM Technical Digest</i> , IEEE, pp. 597-600 (December 5-7, 1983).
	AO	42	van de Kamp, M.M.J.L., "Asymmetric signal level distribution due to tropospheric scintillation," <i>Electronics Letters</i> , IEE, Vol. 34, No. 11, pp. 1145-1146 (May 28, 1998).
	AP	42	Vasseur, H. and Vanhoenacker, D., "Characterization of tropospheric turbulent layers from radiosonde data," <i>Electronics Letters</i> , IEE, Vol. 34, No. 4, pp. 318-319 (February 19, 1998).
	AQ	42	Verdone, R., "Outage Probability Analysis for Short-Range Communication Systems at 60 Ghz in ATT Urban Environments," <i>IEEE Transactions on Vehicular Technology</i> , IEEE Vehicular Technology Society, Vol. 46, No. 4, pp. 1027-1039 (November 1997).
	AR	42	Vieira-Ribeiro, S.A., <i>Single-IF DECT Receiver Architecture using a Quadrature Sub-Sampling Band-Pass Sigma-Delta Modulator</i> , Thesis for Degree of Master's of Engineering, Carleton University, UMI Dissertation Services, pp. 1-180 (April 1995).

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	AA43	5,960,033	09/1999	Shibano et al.			
	AB43	6,041,073	03/2000	Davidovici et al.			
	AC43	6,054,889	04/2000	Kobayashi			
	AD43	6,084,922	07/2000	Zhou et al.			
	AE43	6,125,271	09/2000	Rowland et al.			
	AF43	6,147,340	11/2000	Levy			RECEIVED DEC 15 2003
	AG43	6,147,763	11/2000	Steinlechner			
	AH43	6,150,890	11/2000	Damgaard et al.			
	AI43	5,126,682	06/1992	Weinberg et al.			

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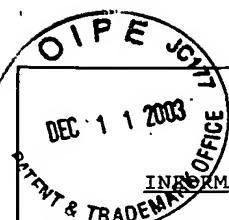
OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

AN	43	Vilar, E. et al., "A Comprehensive/Selective MM-Wave Satellite Downlink Experiment on Fade Dynamics," <i>Tenth International Conference on Antennas and Propagation</i> , Electronics Division of the IEE, pp. 2.98-2.101 (April 14-17, 1997).
AO	43	Vilar, E. et al., "A System to Measure LOS Atmospheric Transmittance at 19 Ghz," <i>AGARD Conference Proceedings No. 346: Characteristics of the Lower Atmosphere Influencing Radio Wave Propagation</i> , AGARD, pp. 8-1 - 8-16 (October 4-7, 1983).
AP	43	Vilar, E. and Smith, H., "A Theoretical and Experimental Study of Angular Scintillations in Earth Space Paths," <i>IEEE Transactions on Antennas and Propagation</i> , IEEE, Vol. AP-34, No. 1, pp. 2-10 (January 1986).
AQ	43	Vilar, E. et al., "A Wide Band Transhorizon Experiment at 11.6 Ghz," <i>Eighth International Conference on Antennas and Propagation</i> , Electronics Division of the IEE, pp. 441-445 (March 30- April 2, 1993).
AR	43	Vilar, E. and Matthews, P.A., "Amplitude Dependence of Frequency in Oscillators," <i>Electronics Letters</i> , IEE, Vol. 8, No. 20, pp. 509-511 (October 5, 1972).

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA44	5,841,811	11/1998	Song			
	AB44	4,051,475	09/1977	Campbell			
	AC44	5,953,642	09/1999	Feldtkeller et al.			
	AD44	4,653,117	03/1987	Heck			
	AE44	5,859,878	01/1999	Phillips et al.			
	AF44	5,894,496	04/1999	Jones			RECEIVED DEC 15 2003
	AG44	5,915,278	06/1999	Mallick			
	AH44	6,028,887	02/2000	Harrison et al.			Technology Center 2000
	AI44	6,081,691	06/2000	Renard et al.			

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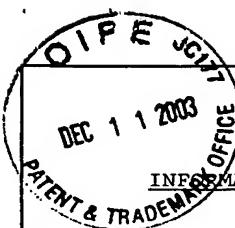
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	AN	44	Vilar, E. et al., "An experimental mm-wave receiver system for measuring phase noise due to atmospheric turbulence," <i>Proceedings of the 25th European Microwave Conference</i> , Nexus House, pp. 114-119 (1995).
	AO	44	Vilar, E. and Burgueño, A., "Analysis and Modeling of Time Intervals Between Rain Rate Exceedances in the Context of Fade Dynamics," <i>IEEE Transactions on Communications</i> , IEEE Communications Society, Vol. 39, No. 9, pp. 1306-1312 (September 1991).
	AP	44	Vilar, E. et al., "Angle of Arrival Fluctuations in High and Low Elevation Earth Space Paths," <i>Fourth International Conference on Antennas and Propagation (ICAP 85)</i> , Electronics Division of the IEE, pp. 83-88 (April 16-19, 1985).
	AQ	44	Vilar, E., "Antennas and Propagation: A Telecommunications Systems Subject," <i>Electronics Division Colloquium on Teaching Antennas and Propagation to Undergraduates</i> , IEE, pp. 7/1-7/6 (March 8, 1988).
	AR	44	Vilar, E. et al., "CERS*. Millimetre-Wave Beacon Package and Related Payload Doppler Correction Strategies," <i>Electronics Division Colloquium on CERS- Communications Engineering Research Satellite</i> , IEE, pp. 10/1-10/10 (April 10, 1984).

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	AA45	6,121,819	09/2000	Traylor			
	AB45	6,144,236	11/2000	Vice et al.			
	AC45	6,144,846	11/2000	Durec			
	AD45	6,175,728 B1	01/2001	Mitama			
	AE45	5,705,949	01/1998	Alelyunas et al.			
	AF45	5,883,548	03/1999	Assard et al.			DEC 15 2003
	AG45	4,484,143	11/1984	French et al.			
	AH45	5,841,324	11/1998	Williams			Technology Center 2500
	AI45	4,855,894	08/1989	Asahi et al.			

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	AM						Yes No

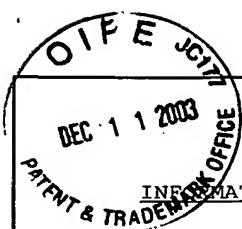
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AN	45	Vilar, E. and Mousley, T.J., "Comment and Reply: Probability Density Function of Amplitude Scintillations," <i>Electronics Letters</i> , IEE, Vol. 21, No. 14, pp. 620-622 (July 4, 1985).
AO	45	Vilar, E. et al., "Comparison of Rainfall Rate Duration Distributions for ILE-IFE and Barcelona," <i>Electronics Letters</i> , IEE, Vol. 28, No. 20, pp. 1922-1924 (September 24, 1992).
AP	45	Vilar, E., "Depolarization and Field Transmittances in Indoor Communications," <i>Electronics Letters</i> , IEE, Vol. 27, No. 9, pp. 732-733 (April 25, 1991).
AQ	45	Vilar, E. and Larsen, J.R., "Elevation Dependence of Amplitude Scintillations on Low Elevation Earth Space Paths," <i>Sixth International Conference on Antennas and Propagation (ICAP 89) Part 2: Propagation</i> , IEE, pp. 150-154 (April 4-7, 1989).
AR	45	Vilar, E. et al., "Experimental System and Measurements of Transhorizon Signal Levels at 11 Ghz," <i>18th European Microwave Conference</i> , Microwave Exhibitions and Publishers Ltd., pp. 429-435 (September 12 - 15, 1988).

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	AA46	5,319,799	06/1994	Morita			
	AB46	5,801,654	09/1998	Traylor			
	AC46	5,369,404	11/1994	Galton			
	AD46	3,716,730	02/1973	Cerny, Jr.			
	AE46	4,080,573	03/1978	Howell			
	AF46	4,334,324	06/1982	Hoover			
	AG46	4,369,522	01/1983	Cerny, Jr. et al.			
	AH46	5,465,418	11/1995	Zhou et al.			
	AI46	5,513,389	04/1996	Reeser et al.			

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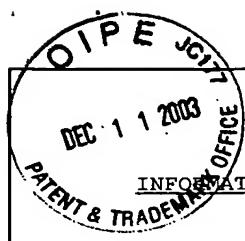
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	AJ						Yes No
	AK						Yes No
	AL						Yes No
	AM						Yes No

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AN	46	Vilar, E. and Matthews, P.A., "Importance of Amplitude Scintillations in Millimetric Radio Links," <i>Proceedings of the 4th European Microwave Conference</i> , Microwave Exhibitions and Publishers, pp. 202-206 (September 10-13, 1974).
AO	46	Vilar, E. and Haddon, J., "Measurement and Modeling of Scintillation Intensity to Estimate Turbulence Parameters in an Earth-Space Path," <i>IEEE Transactions on Antennas and Propagation</i> , IEEE Antennas and Propagation Society, Vol. AP-32, No. 4, pp. 340-346 (April 1984).
AP	46	Vilar, E. and Matthews, P.A., "Measurement of Phase Fluctuations on Millimetric Radiowave Propagation," <i>Electronics Letters</i> , IEE, Vol. 7, No. 18, pp. 566-568 (September 9, 1971).
AQ	46	Vilar, E. and Wan, K.W., "Narrow and Wide Band Estimates of Field Strength for Indoor Communications in the Millimetre Band," <i>Electronics Division Colloquium on Radiocommunications in the Range 30-60 Ghz</i> , IEE, pp. 5/1-5/8 (January 17, 1991).
AR	46	Vilar, E. and Faulkner, N.D., "Phase Noise and Frequency Stability Measurements. Numerical Techniques and Limitations," <i>Electronics Division Colloquium on Low Noise Oscillators and Synthesizer</i> , IEE, 5 pages (January 23, 1986).

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	AA47	5,959,850	09/1999	Lim			
	AB47	5,157,687	10/1992	Tymes			
	AC47	5,945,660	08/1999	Nakasui et al.			
	AD47	6,091,939	07/2000	Banh			
	AE47	6,091,941	07/2000	Moriyama et al.			
	AF47	6,098,886	08/2000	Swift et al.			
	AG47	6,215,475 B1	04/2001	Meyerson et al.			
	AH47	6,049,706	04/2000	Cook et al.			
	AI47	6,061,551	05/2000	Sorrells et al.			

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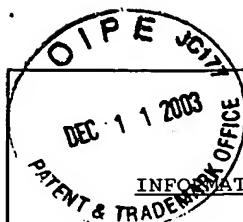
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	AG48	5,678,220	10/1997	Fournier			
	AH48	5,926,065	07/1999	Wakai et al.			Technology Center 2600
	AI48	3,622,885	11/1971	Oberdorf et al.			

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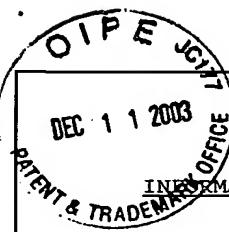
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	AD49	4,384,357	05/1983	deBuda et al.			
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	AB50	3,246,084	04/1966	Kryter			
	AC50	3,702,440	11/1972	Moore			
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	AE50	3,852,530	12/1974	Shen			
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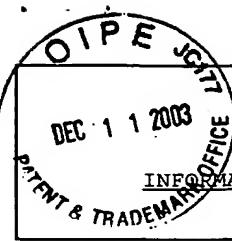
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	AB51	6,085,073	07/2000	Palermo et al.			
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	AB52	4,660,164	04/1987	Leibowitz			
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	AD52	4,857,928	08/1989	Gailus et al.			
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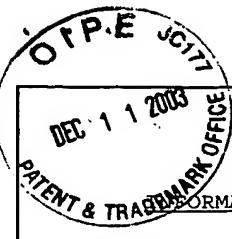
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	AD53	3,940,697	02/1976	Morgan			
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	AG53	4,115,737	09/1978	Hongu et al.			Technology Center 2600
	AH53	5,710,992	01/1998	Sawada et al.			
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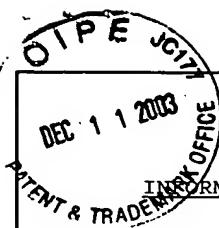
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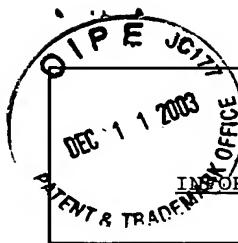
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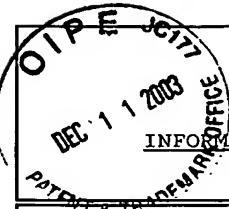
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	AM						Yes No

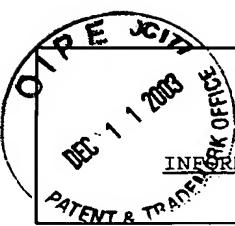
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	AN	57	Akos, D.M. et al., "Direct Bandpass Sampling of Multiple Distinct RF Signals," <i>IEEE Transactions on Communications</i> , IEEE, Vol. 47, No. 7, pp. 983-988 (July 1999).
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EXAMINER

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INFORMATION DISCLOSURE STATEMENT

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U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA						
	AB						
	AC						
	AD						
	AE						DEC 15 2003
	AF						
	AG						Technology Center 2000
	AH						
	AI						

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FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ						Yes No
	AK						Yes No
	AL						Yes No
	AM						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

AN	58	Dines, J.A.B., "Smart Pixel Optoelectronic Receiver Based on a Charge Sensitive Amplifier Design," <i>IEEE Journal of Selected Topics in Quantum Electronics</i> , IEEE, Vol. 2, No. 1, pp. 117-120 (April 1996).
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